

GOVERNMENT OF INDIA  
MINISTRY OF COMMERCE AND INDUSTRY



**R E P O R T**  
OF THE  
**ALUMINIUM INDUSTRY,**  
ON THE  
**1971**

सत्यमेव जयते

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**Secretary**



# REPORT ON THE CONTINUANCE OF PROTECTION TO THE ALUMINIUM INDUSTRY (1971)

## E R R A T A

<i>Page</i> 1	<i>Para/Line</i> 2	<i>For</i> 3	<i>Read</i> 4
viii	Para No. 11	1.1	11
viii	Para No. 12	quantum---Aluminium	quantum of Aluminium
3	Foot Note, line 1	calculated in	calculated on
6	Para 4.1.3, line 5	Rs. 3.4 to crores to	Rs. 3.4 crores to
10	Para 4.4.6, line 6	Department of mines	Department of Mines
10	Para 4.4.6, line 7	and metals	and Metals
10	Para 4.4.6, line 11	Co. however,	Company, however,
13	Table 2	(i) The bracket on left-hand side of figures should be shifted to right hand side of the figures. (ii) 2,61,000 ----- should be 4,30,000 shifted under the figure 169,000	
14	Table below Para 4.5.1. Against 1975-76 under Internal Demand	312	332
16	Para 4.6, Line 5	The Rule should be deleted.	
27	Para 5.2.3.2, line 9	steps or a	steps for a
32	Para 8.2, last line	51,61	5,161
34	Para 9.4, line 7	inadequate quantities	in adequate quantities

<i>Page</i>	<i>Para/Line</i>	<i>For</i>	<i>Read</i>
1	2	3	4
35	Para 9.6, line 13	ex-works of	ex-works cost of
36	Table 10, above the table.	( ) (Per Tonne)	(Per Tonne)
36	Table 10, against (C) under INDALCO	10.0	100
36	Do.	9.26	92.6
39	Para 10. 4, line 8	started	stated
41	Para 10. 8, line 3 from bottom.	and dur	and dur-
43	Para 10. 12, line 3	for E. G.	for E. C.
50	Note-(1), line 2	Notifications	Notification
50	Note-(1), line 6	he eby	hereby
50	Para below the Table, line 4.	occur	occurs
51	Explanation, line 2	mean	means
57	Col. 5 below (iii), line 1.	On which	on which
63	Under F, Sl. No. 1	Subhash Roadh	Subhash Road
63	Under F, Sl. No. 5	(Gujatat)	(Gujarat)
63	Under G. (a), Sl. No. 2	Steel and Mines	Steel and Mines,
65	Under G. (d), Sl. No. 10	The Director	The Director
67	Appendix III, against Sl. Nos. 1 to 4, line 2.	Middleton Street	1, Middleton Street
76	(ii) HINDALCO, line 21.	demand,	demand—
78	Under 1972 against (b) (i)	160	150
82	Under D, line 3	Commissions, etc.	Commission, etc.,
83	Amount under 1968 against B, (i)	1261.33	1261.13

GOVERNMENT OF INDIA  
(BHARAT SARKAR)  
MINISTRY OF FOREIGN TRADE  
(VIDESH VYAPAR MANTRALAYA)

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*New Delhi, the 10th December 1971.*

**RESOLUTION**

**Tariffs**

**No. 1(1)-Tar/71.**—The Tariff Commission has submitted its Report on the continuance of protection to the Aluminium Industry on the basis of an inquiry undertaken by it under sections 11(c) and 13 of the Tariff Commission Act, 1951 (50 of 1951). Its recommendations are as follows :—

- (1) The Aluminium Industry in India has come of age and outgrown the need for further fiscal protection. Hence, protection granted to the industry need not be continued beyond 31st December, 1971, and the protective import duties on articles covered under Item Nos. 66(a) and 66(1) of the First Schedule to the Indian Customs Tariff may be replaced by revenue duties at the appropriate rates.
- (2) Having regard to the views expressed by Bharat Aluminium Company, the Public sector undertaking and some of the State Governments, if Government desire to retain a degree of flexibility, it might consider the possibility of continuing to deem the Aluminium Industry as protected within the meaning of Section 11(a) of the Tariff Commission Act, 1951 for a further period of three years or so.
- (3) Having regard to the large expansion programmed for this industry and the importance of its role in economic development, its growing need for adequate supplies of electric energy at economic prices.

a point to which attention has been successively drawn by the Commission in its earlier reports needs re-emphasis.

- (4) No estimate of demand or study of consumption pattern or other projections of Aluminium would be complete without a proper assessment of the performance of the small scale sector. Early steps should accordingly be taken for the adequate collection of data from the small scale sector and an objective evaluation thereof.
- (5) The export policy should be formulated on a long-term basis and the procedures less time-consuming.
- (6) By and large, the quality of the indigenous primary metal seems to be satisfactory although for sheets and circles there seems to be some room for further improvement. It would be in the interests of the producers themselves to whole-heartedly join the I.S.I. Certification Marks Scheme and thus obtain official authorisation of the quality of their products.

2. Government accept recommendation (1) above. They have decided that, after the withdrawal of the protective rates of duty, the effective rates of revenue duty should for the present be maintained at the same level as the effective rates of the existing protective duty.

Necessary legislation to implement the decisions of Govt. will be undertaken in Parliament in due course.

3. Regarding recommendation (2), Government consider that the aluminium industry should be deemed to be protected within the meaning of section 11(a) of the Tariff Commission Act, 1951, for a further period of five years ending 31st December, 1976. They further consider that the progress of the industry should be reviewed periodically by the Tariff Commission to assess the position.

4. Government have taken note of recommendations (3) and (4) and will take steps to implement them as far as possible.

5. With reference to recommendation (5), the Government have already decided that in view of the country's need for aluminium, export of E.C. Grade aluminium cannot be allowed for the present, while exports of other grades can be allowed only in very limited quantities to meet essential commitments. There cannot be a static policy in this regard, and the situation will be reviewed from time to time in the light of the changing circumstances.

6. The Commission has also, in passing, recommended that to give an impetus to production, a scheme of tax credit certificates for providing relief in excise duty on excess clearance, which was discontinued from March 1970, should be revived. Government had taken a considered decision to give up this scheme, and it is not, therefore, feasible to revive it with reference to aluminium, particularly as several other measures for stimulating the production of aluminium are being taken.

7. The attention of the producers of the primary metal is drawn to recommendation (6).

8. The Commission has reiterated some of the recommendations made in its previous Report of 1968, covering such matters as the determination in advance of actual requirements of aluminium, reduction of the costs of petroleum coke, cryolite and aluminium fluoride, re-examination of electricity tariffs, effecting technological improvements, and the like. In government's previous Resolution dated 7-12-1968 on the 1968 report, it was stated that Government had taken note of these recommendations wherever action lay with Government, and that steps would be taken to implement them as far as possible. The attention of State Governments, Hindustan Steel, etc., was also drawn to the recommendations concerning them. Some of the recommendations have since been implemented. Government will continue to pay attention to the various recommendations with a view to implementing them as far as possible. Government would also invite the attention of all concerned to such of the recommendations which require action from them.

## ORDER

**ORDERED** that the Resolution be published in the Gazette of India and a copy thereof communicated to all concerned.

**(S. VENKATESAN)**

*Joint Secretary to the Government of India.*





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## GLOSSARY

D.G.T.D.	.	.	.	Directorate General of Technical Development.
Department of Mines and Metals.	.	.	.	Department of Mines and Metals in the Ministry of Petroleum & Chemicals and Mines & Metals (now in the Ministry of Steel and Mines).
I.S.I.	.	.	.	Indian Standards Institution.
G.S.I.	.	.	.	Geological Survey of India.
I.B.M.	.	.	.	Indian Bureau of Mines.
M.M.T.C.	.	.	.	Minerals and Metals Trading Corporation of India Ltd.
N.I.D.C.	.	.	.	National Industrial Development Corporation.
INDALCO	.	.	.	Indian Aluminium Company Ltd.
ALCOP	.	.	.	Aluminium Corporation of India Ltd.
HINDALCO	.	.	.	Hindustan Aluminium Corporation Ltd.
MALCO	.	.	.	Madras Aluminium Company Ltd.
I.C.T. Schedule	.	.	.	Indian Customs Tariff Schedule.
U.N.I.D.O.	.	.	.	United Nations Industrial Development Organisation.

## REPORT ON THE CONTINUANCE OF PROTECTION TO THE ALUMINIUM INDUSTRY

1.1. The Aluminium industry was initially granted tariff protection in 1949. Since then six Inquiries (including a re-

view at the instance of Government  
**1. Introduction.** by the Tariff Board) have been undertaken on this Industry. The latter five were conducted *suo motu* in accordance with Sections 11(e) and 13 of the Tariff Commission Act, 1951. Details of tariff variations at each of the Inquiries are given below.

Sl. No.	Year of the Report	Rates of Protective duty
1	1946	Protection granted in 1949 through duty- <i>cum</i> -subsidy. The rate of duty was 30 per cent <i>ad valorem</i> plus specific duty of Rs. 328 per ton of ingots and Rs. 121 per ton of sheets, strips and circles. The rates of specific duty were to be progressively reduced.
2	1951 (Review)	Subsidy and the specific duty were discontinued. The duty of 30 per cent <i>ad valorem</i> was retained.
3	1955	30 per cent <i>ad valorem</i> plus a surcharge of 5 per cent. Under the Finance (No. 2) Act, 1957, the duty was rounded off to 35 per cent <i>ad valorem</i> .
4	1958	35 per cent <i>ad valorem</i> plus a countervailing import duty equivalent to the Excise duty fixed in respect of the corresponding indigenous products, by the Finance Act, 1960 at Rs. 300 per tonne of Aluminium in any crude form, including ingots, bars, blocks, slabs, billets, shots and pellets and Rs. 500 per tonne of Aluminium manufactures, namely, plates, sheets, circles, strips and foils in any form or size.

Sl. No.	Year of the Report	Rates of Protective duty
5	1960	Recommendation of a reduced rate of duty at 25 per cent <i>ad valorem</i> was not accepted by Government. The then existing duty of 35 per cent <i>ad valorem</i> was therefore continued.
6	1964	35 per cent <i>ad valorem</i> excluding the then prevalent surcharge and countervailing Excise duty.
7	1968	The then existing rate of duty (revised after devaluation w.e.f. 6-6-1966) of 20 per cent <i>ad valorem</i> on ingots, bars etc. and 27½ per cent <i>ad valorem</i> on sheets, circles etc. exclusive of the surcharge and the countervailing Excise duty.

As per our recommendations in the last Report of 1968 approved by Government, the Industry is at present enjoying tariff protection and this benefit would cease to operate after 31st December, 1971. Hence the present *suo motu* Inquiry, the seventh one in the series.

1.2. Protected items of Aluminium and its manufactures are assessed to customs duty under Items 66(a) and 66(1) of the First Schedule to the Indian Tariff Act, 1934. Briefly, the rates of Customs duty are as follows :

<i>Protected items</i>	<i>Customs duty</i>
(i) Aluminium in any crude form . . . . .	20 per cent
(ii) Aluminium used for manufacture of Aluminium conductors . . . . .	15 per cent
(iii) Aluminium plates, sheets, circles, strips and foils . . . . .	27½ per cent

In addition to the above, Aluminium and its manufactures imported into India are also liable to a countervailing duty equal to the Excise duty leviable on like articles manufactured in India. This additional duty is calculated on the total landed cost of the imported products.

1.3. For the purpose of Excises duty, Aluminium and its manufactures are covered under serial No. 27 of the First Schedule of the Central Excises and Salt Act, 1944. The current rates of Excise duty chargeable on protected items are briefly shown below.

<i>Protected items</i>	<i>Excise duty</i>
(i) Aluminium in any crude form . . . . .	30 per cent
(ii) Aluminium manufactures, namely, plates, sheets, circles (except 18-24 G) strips and container sheets . . . . .	30 per cent
(iii) Aluminium circles of 18-24 G . . . . .	21 per cent
(iv) Aluminium foils . . . . .	24 per cent

1.4. Thus the present total effective duties chargeable on the imports of Aluminium and its manufactures (protected categories) are as follows :

<i>Protected items</i>	<i>Total duty*</i>
(i) Aluminium in any crude form . . . . .	56 per cent
(ii) Aluminium used for Aluminium conductors . . . . .	49.5 per cent
(iii) Aluminium plates, sheets, circles, strips and container sheets . . . . .	65.75 per cent
(iv) Aluminium foils . . . . .	58.10 per cent

Details of the current rates of Customs and Excise duty, including various exemptions allowed, are given in Appendix I.

1.5. To give an impetus to production, a scheme of Tax Credit Certificate (Excise duty on excess clearance) was introduced in 1967. This was discontinued from March 1970.

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\*Countervailing Excise duty is calculated in the value of the imported articles after adding the Customs duty.

We have received representations from all the producers for the revival of this scheme. We recommend this to Govt. for due consideration.

2.1. A Press note was issued on the 7th April, 1971 inviting parties interested in the Inquiry to obtain copies of our questionnaires for various interests connected with the Industry. Preceding this, special

## 2. Method of Inquiry

questionnaires were issued to known producers and consumers of Aluminium and their respective Associations and later to the raw material manufacturers. Matters relating to costs of production were also later called for from the producers through a special questionnaire. While a comprehensive memorandum on the present position of the Industry, also indicating significant developments achieved since the last Inquiry and the approved lines of future development, was invited from both the D.G.T.D. and the Department of Mines and Metals, letters were issued on certain specific issues to various other Government Departments/Bodies, both Central as well as State. Among these were the Development Commissioner of Small Scale Industries, I.S.I., G.S.I., I.B.M., M.M.T.C., the Indian Government's Embassies abroad and Trade representatives of a few foreign countries accredited in India. A list of those to whom questionnaires or letters were addressed and from whom replies or memoranda were received is given in Appendix II.

2.2. We held a joint discussion with the four primary Metal manufacturers on the 25th August, 1971. Names of those who participated in the discussions are given in Appendix III.

3.1. The items covered under the existing scheme of protection are the following:

## 3. Scope of the Inquiry

- (i) Aluminium in any crude form including ingots, bars, blocks, slabs, billets, shots and pellets—I.C.T. item No. 66(1) ;
- (ii) Aluminium manufactures, namely, plates, sheets, circles, strips and foil and also Aluminium foils in

any form or size ordinarily used as parts and fittings of tea chests—I.C.T. item No. 66(a) ; and

- (iii) All non-ferrous alloys and manufactures containing more than 97 per cent Aluminium—I.C.T. item No. 70(1).

3.2. All other manufactures of aluminium including extruded items covered under I.C.T. Item No. 66(b) and aluminium scrap covered under I.C.T. Item No. 66(2) are outside the scope of protection and these carry only revenue rates of duty. In connection with the present inquiry, HINDALCO and ALCOP have suggested that all the semi-fabricating items of aluminium including extrusions also should be covered for protection. We have however considered it not necessary to modify the scope of this inquiry especially as we are not recommending the continuance of protection to this industry for reasons given in paragraph 10.

#### 4.1. *Progress since last Inquiry*

4.1.1. As at the time of our last Inquiry in 1968, the four units, namely, M/s. Indian Aluminium Company (INDALCO), Aluminium Corporation of India (ALCOP), Hindustan Aluminium Corporation of India (HINDALCO), and

#### 4. Structure of the Industry

M/s. Madras Aluminium Company (MALCO) continue to be the only manufacturers of primary Aluminium. The Korba and Koyna units of M/s. Bharat Aluminium Co., the Public sector project, are still under installation.

4.1.2. Between 1968 and 1971 the Industry made significant progress resulting in an increase of about 44 per cent of the capacity from 1,17,050 to 1,69,000 tonnes. The increase was accounted for as follows :—

- (i) INDALCO's Belgaum Smelter with an installed capacity of 30,000 tonnes commenced regular production in 1970.



- (ii) As a part of its expansion programme, HINDALCO increased its capacity by 20,000 tonnes in 1969.
- (iii) ALCOP increased its capacity by 300 tonnes towards the end of 1968 by installing some balancing equipment.
- (iv) MALCO's capacity is reported to have increased by 1,500 tonnes\*.

4.1.3. The paid up capital of the Industry as a whole has remained static at around Rs. 32 crores during this period. The sales turnover and dividends declared have however increased every year, from Rs. 60 crores in 1968 to Rs. 88 crores in 1970 and from Rs. 3.4 to crores to Rs. 3.9 crores respectively during the same period. ALCOP's performance during this period was however poor. The total reserves and surplus of the industry have also increased from Rs. 30 crores in 1968 to Rs. 52 crores in 1970. There has also been a steady increase in the employment of personnel in the Industry from 11,517 in 1968 to 13,007 in 1969 and 13,369 in 1970.

#### 4.2. *Capacity and Production*

As stated earlier the total installed capacity of the Industry has during the last three years, increased from 1,17,050 to 1,69,000 tonnes. Total production too continued to increase from 1,20,136 tonnes in 1968 to 1,32,556 tonnes in 1969 and to 1,61,081 tonnes in 1970. The production levels would have been higher still but for the long strikes which afflicted two of the units during the period, telling upon their performance. The present capacity and production of ingots since 1967 of the four manufacturing units together with the capacities adopted in our last Report are given in Table 1 below.

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\*See footnote below Table. 1

TABLE 1

*Capacity and Production of Primary Metal*

(Tonnes)

	Installed Capacity		Production of Primary Metal			
	1968 *	1971 **	1968 **	1969 **	1970 **	1971 (Jan— June) **
<b>1. INDALCO</b>						
Hirakud .	20,000	20,000	20,879	22,576	16,198	N.A.
Alupuram .	15,850	16,000	17,865	17,856	18,256	N.A.
Belgaum .	..	30,000	..	1,128	27,209	N.A.
<b>TOTAL INDALCO</b>	<b>35,850</b>	<b>66,000</b>	<b>38,744</b>	<b>41,560</b>	<b>61,663</b>	<b>38,929</b>
<b>2. ALCOP .</b>	<b>8,700</b>	<b>9,000</b>	<b>8,641</b>	<b>5,525</b>	<b>8,073</b>	<b>3,800</b>
<b>3. HINDALCO</b>	<b>60,000</b>	<b>80,000</b>	<b>59,708</b>	<b>72,233</b>	<b>78,191</b>	<b>37,937</b>
<b>4. MALCO .</b>	<b>12,500</b>	<b>14,000@</b>	<b>13,043</b>	<b>13,238</b>	<b>13,154</b>	<b>6,457</b>
<b>TOTAL .</b>	<b>1,17,050</b>	<b>1,69,000</b>	<b>1,20,136</b>	<b>1,32,556</b>	<b>1,61,081</b>	<b>87,123</b>

\*Report of the Tariff Commission, 1968.

\*\*D. G. T. D's memorandum and Producers' replies to questionnaire.

@Ministry of Mines and Metals. The Producer and D. G. T. D. have however reported 12,500 tonnes.

*4.3. Utilisation of Capacity*

4.3.1. There was a fall in the capacity utilisation particularly during 1969, but it again picked up in 1970 as could be seen from the following figures.

	1968	1969	1970
Installed capacity* (tonnes) .	1,19,000	1,59,000	1,69,000
Production (tonnes) .	1,20,136	1,32,556	1,61,081
Utilisation (percentage) .	101	83	95

\*Source : D.G.T.D.

4.3.2. The above position does not materially undergo any change even if the Belgaum Smelter which commenced its production by the end of 1969, is excluded from the computation. What is true of the Industry as a whole, however, does not hold good for the individual units as their performance during this period was at variance with the Industry's overall performance as may be seen from Appendix IV. For example, the utilisation of INDALCO's Always Smelter increased from 112 per cent in 1968 and 1969 to 114 per cent in 1970, while in Hirakud it increased from 104 per cent to 113 per cent in 1969 but slumped to 81 per cent in 1970 mainly because of a strike in this Works consequent to which there was no production for three months. MALCO has maintained a 93/94 per cent utilisation ratio throughout. Both HINDALCO and ALCOP had reduced utilisation of capacity in 1969 and even in 1970 their utilisation was not as high as that in 1968. HINDALCO has informed us that it was working below capacity due to a 25 per cent power cut. The utilisation of ALCOP in 1969 was as low as 62 per cent and this has been attributed to a very long strike in the unit from middle of June to middle of October 1969. Certain other factors such as curtailment of demand from the Cable industry and imports of E.C. Grade Aluminium in 1967 leading to accumulation of stocks have also been attributed as having been responsible for this under-utilisation. In this context it is interesting to note that even in the United States the utilisation of capacity during 1968 and 1969 was of the order of 90 and 97.5 per cent respectively.

#### 4.4 Future Expansion

4.4.1. At the time of our last Inquiry we were informed about the licensing of additional capacity of the order of 4,01,300 tonnes as indicated below :

Expansion of the existing units . . . . .	1,96,300 Tonnes
New units licensed . . . . .	2,05,000 „
<b>TOTAL</b> . . . . .	<b>4,01,300 Tonnes</b>

Of this the share of the two Public sector units was 1,50,000 tonnes. All the licences were then in a nebulous state and

there was no indication as to how much of the extra capacity would materialise. During the course of this Inquiry we have seen that of the various schemes reported to us in 1968, only the following two have so far taken shape :

- (a) **INDALCO's** Belgaum Smelter with a capacity of 30,000 tonnes went on stream by the end of 1969.
- (b) **HINDALCO** expanded its capacity from 60,000 to 80,000 tonnes.

4.4.2. The latest position with regard to additional/new schemes approved or under implementation is discussed below. We are happy to note that in the recent industrial licences issued (for expansion of Belgaum Smelter and the establishment of the new Smelter at Orissa) Government have stipulated that the projects should be so planned as to synchronise Alumina and Metal production and that no import of Alumina would be allowed. This is in keeping with our recommendation in the last Report reproduced below :

“Establishment of Alumina plants within a stipulated period should be a condition precedent in future to the setting up of Smelters in order that unnecessary dependence on imported Alumina may be eliminated.”

4.4.3. **INDALCO.**—The letter of intent for 70,000 tonnes in favour of the Belgaum Smelter of this unit reported in our last Report has since been cancelled. This was replaced by a licence for substantial expansion of the Smelter from 30,000 to 40,000 tonnes and a letter of intent for further expansion from 40,000 to 60,000 tonnes. The former, expected to be completed by March 1972, is estimated to cost about Rs. 3 crores of which the foreign exchange component by way of import of equipment involved would be Rs. 60 lakhs. We were informed that an application submitted for this was under examination. The second stage of expansion is likely to be completed by 1974-75 by which period the Company expects to expand the Metal capacity to 1,00,000 tonnes.

4.4.4. *HINDALCO*.—As early as 1966 the unit was given a licence for expansion upto 1,20,000 tonnes. Against this it has already expanded its capacity to 80,000 tonnes. The remaining expansion is expected to be completed in two stages, namely, 1,00,000 tonnes by April, 1972 and 1,20,000 tonnes by the end of 1973. We understand that this unit has been recently permitted to depute a team to U.S.A. to start preliminary negotiations in regard to foreign exchange loans for the expansion programme and that its application for import of capital goods was under consideration.

4.4.5. *MALCO*.—The unit has already a licence for expanding its capacity to 25,000 tonnes. Its application for import of capital goods was considered and import of certain equipment was being allowed. It is understood that the Company has with the approval of Government made the necessary foreign exchange financing arrangement for the expansion. The Smelter has already attained a capacity of 14,000 tonnes and further increase upto 25,000 is expected to be completed by 1973-74.

4.4.6. *ALCOP*.—Early this year a licence for establishment of a new integrated Aluminium project in Orissa with a capacity of 30,000 tonnes was granted in favour of the Aluminium Corporation of India. The Capital Goods Committee has given clearance for import of capital goods valued at Rs. 1.60 crores. We are informed by the Department of mines and metals that satisfactory progress in the matter of technical collaboration for establishment of the Smelter has been made by the unit and that it is expected to be commissioned by 1973-74 to reach full capacity in the following year. The Co. however, hopes that only half the capacity would be achieved by that year.

4.4.7. *Public Sector Projects*.—As stated in our last Report, Bharat Aluminium Company, a Public sector project

for the manufacture of Aluminium ingots has been established with two large units at Korba and Koyna with capacities of 1,00,000 and 50,000 tonnes respectively. The first phase of the former was expected to be commissioned by 1972-73, while the latter project together with the subsequent phase of the former, was expected to be set up only by about 1975. More details of the progress made by these two units since our last Inquiry reported to us are briefly given below.

4.4.8. *Korba Project.*—This project is based on the Bauxite deposits in the Amarkantak and Phutka Pahar areas in Madhya Pradesh and electric power from Korba Thermal Station. It is a composite project with an annual capacity of 2,00,000 tonnes of Alumina and 1,00,000 tonnes of Aluminium metal including about 60,000 tonnes of Aluminium semis. Preliminary work relating to the Alumina plant is in progress and it is expected to be commissioned towards the middle of 1972. The second phase of the Korba Aluminium Project consisting of the Smelter for annual production of 1,00,000 tonnes of Aluminium metal and a Rolling Mill is being undertaken with the technical and financial assistance of the U.S.S.R. under the 300 million Rouble Credit Agreement. Based on the design documentation in respect of special technological units assigned to M/s. Tsvetmex-promexport, a Soviet Organisation, the N.I.D.C. has prepared the detailed project report and we are informed that the same is under consideration of Government. The total cost of the entire Korba Project is estimated at about Rs. 180 crores of which the cost of equipment to be imported from U.S.S.R. would be met from the Soviet Credit. These plants are expected to be completed and go into production in stages in 1973-74 and reach full capacity by 1975-76.

4.4.9 *Koyna Project.*—This Project to be located in Ratnagiri is based on Udgiri and Dhangarwadi Bauxite deposits in Maharashtra. The required power would be sup-

plied from the Koyna Hydel Station. The licensed capacity of this unit is 50,000 tonnes of which 25,000 tonnes would be Aluminium of E.C. Grade. The detailed project report is to be prepared by N.I.D.C. in technical association with M/s. Chemokomplex of Hungary. While the project report was envisaged to be completed by October 1971, it was decided that it would be advantageous to commission the Smelter plant at Ratnagiri earlier than the Alumina plant with a view to utilising the expected surplus Alumina from Korba. We understand that the detailed project report for setting up the Smelter has been received from the Company and is being examined by Government. Meanwhile, spade work such as acquisition of land, preparation of terrain and temporary electric and water supply connections etc., has been initiated and an agreement with the Government of Maharashtra on tariff for power and water supply has also been reached. We also understand that Government are examining the detailed project report of M/s. Kuljian Corporation for the development of Dhangarwadi Bauxite mines. The total outlay on the project is estimated to be about Rs. 55 to 60 crores. This is subject to revision after completion of the examination of the detailed project report. The Smelter plant is likely to go into production in 1973-74 and achieve full capacity by 1975-76. We further understand that while this project is presently planned with a capacity to produce 50,000 tonnes of Aluminium with captive mining facilities, the consultants have been advised that in designing the general layout of the plant, the possibility of future expansion of the project upto a capacity of 1,00,000 tonnes, if necessary, may also be kept in mind.

4.4.10. When all the above schemes, expected to be implemented by 1975-76 are completed, the total installed capacity of the Industry would be of the order of 4.3 lakh tonnes as indicated in the Table below.

TABLE 2

*Summary of Future Expansion Programmes*

		(Tonnes)
Existing Capacity . . . . .		1,69,000
Additional Capacity :		
(A) <i>Existing Units</i>		
INDALCO . . . . .	30,000	81,000
HINDALCO . . . . .	40,000	
MALCO . . . . .	11,000	
(B) <i>New Units</i>		1,80,000
(i) ALCOP's	30,000	
Orissa project . . . . .		
(ii) Bharat Aluminium Company :	1,00,000	
(a) Korba . . . . .		
(b) Koyna . . . . .		
	1,50,000	2,61,000
TOTAL . . . . .		4,30,000

4.4.11. The four primary metal manufacturers have furnished to us their estimates of capacity and production for each of the next four years indicating a gradual increase of capacity from 1,83,000 in 1972 to 2,89,000 tonnes in 1975 and of production from 2,05,000 to 2,85,000 tonnes. Their estimates are in Appendix V. The Department of Mines and Metals has anticipated production ranging from 2,05,000 to 4,33,000 tonnes during the same period. This latter however includes the anticipated production of Public Sector Units of the order of 1,50,000 tonnes.

4.4.12. We have received statistics of world primary Aluminium production compiled by the U.S. Department of Interior, Bureau of Mines for the ten years ending 1969. This is reproduced in Appendix VI. While the world production increased by 12.9 per cent in 1969 over 1968, the increase in



India, in spite of labour disruption referred to earlier was slightly more than 10 per cent in the year. Of the total global production in 1969, 49.2 per cent took place in North America, U.S.A.'s share alone being 37.9 per cent, 37.1 per cent in Europe and 9.3 per cent in Asia. Among Asian countries Japan's output increased fourfold over the decade while India's increase was seven times. For the world as such, production had more than doubled during this period. India's production of Aluminium at least during the last three years was higher than that of South America, Mexico, all Asian countries except Japan, Camaron, Ghana, Oceana, Netherlands, all countries other than Norway among EFTA, Czechoslovakia, East Germany, Greece, Hungary, Iceland, Poland, Rumania, Spain and Yugoslavia.

#### 4.5. Domestic Demand

4.5.1. In our last Report we had assessed the domestic demand for the Metal at 1,35,000 tonnes progressively increasing to 2,25,000 tonnes by 1971 at the rate of 30,000 tonnes per annum. This was more or less on the lines of the estimates prepared in 1968 by the Planning Sub-group for Aluminium & Magnesium constituted by the Department of Mines and Metals. However, at an inter-Ministerial meeting in December 1969, it was noted that owing to the demand picking up after the recession, particularly in respect of requirements of the rural electrification programmes, energisation of agricultural pump sets etc., the demand for Aluminium had gone up beyond what had been estimated in 1968. The revised figures are as follows :

( '000 tonnes)

Year	Internal Demand	Exports	Total Demand	Anticipated Production
1971-72	233	36	269	201
1972-73	254	40	294	205
1973-74	274	50	324	278
1974-75	301	64	365	393
1975-76	312	70	402	433

4.5.2. The primary producers have furnished us with their estimates of demand for the current year and for the next five years, together with the break-up of the different consuming sectors.

These shown in full in Appendix VII are summarised below.

TABLE 3

*Summary of Estimates of Demand received from Producers*

(’000 Tonnes)

Year	INDALCO	HIND- ALCO	ALCOP*	MALCO
1971	204	200	254	241
1972	220	224	280	275
1973	245	251	325	308
1974	282	292	365	344
1975	313	346	410	386

\*For financial years

4.5.3. Compared with the demand estimates arrived at the inter-Ministerial meeting, those of the producers are substantially on the lower side. Even after meeting the exports demand, the inter-Ministerial meeting expected a surplus Aluminium in the country to the tune of 28,000 and 31,000 tonnes in 1974-75 and 1975-76 respectively.

4.6. *Consumption Pattern.*—As regards the consumption pattern of Aluminium it was found during our last Inquiry that nearly 50 per cent of production was consumed by the electrical industries. In terms of contribution by the different manufacturers of the primary Metal during 1970, INDALCO, HINDALCO and MALCO sold 53, 72 and 77 per cent respectively of their production to the electrical sector. ALCOP, however, catered 54 per cent of its production to canning and packaging, building and construction

and miscellaneous industries. The Department of Mines and Metals has informed us that the Central Water and Power Commission has estimated a higher requirement of Aluminium on account of the extensive rural electrification programme during the Fourth Plan period.

In many developed countries, such as the U.S.A. and Japan, transport, construction and packaging industries are increasingly becoming major consuming sectors of consumption of Aluminium. *In India, by and large, the past pattern of consumption would continue to hold good for a number of years to come.*

#### 4.7. Raw Materials

4.7.1. *General Position.*—We now turn to the question of assessing the indigenous facilities for the manufacture of Aluminium. Bauxite/Alumina, Caustic Soda and Pitch are indigenously available, calcined petroleum coke, Cryolite and Aluminium fluoride are partly imported, while Cathode carbon blocks, Calcined anthracite coal and Metallurgical coke of low ash content are wholly imported. The D.G.T.D. has informed us that no indigenous source has yet been established for Carbon cathode blocks, and its requirements would therefore continue to be met from imports. It is expected that the proportion of indigenous availability of Calcined petroleum coke, Cryolite, Aluminium fluoride and Calcined anthracite coal might somewhat increase in the future. However, as increasing capacities of Aluminium come to be established in the country, shortage of Caustic soda and Pitch are likely to be felt and these raw materials would have to be imported to some extent.

#### 4.7.2. Bauxite

4.7.2.1. We have been informed that the G.S.I. is executing a programme of detailed and regional exploration of coastal and near-coast Bauxite deposits in the country. Promising indications of potentially large deposits have already been obtained in parts of Goa and Andhra Pradesh and medium to small deposits have also been located in the coastal tracts of Kerala. The total reserves of measured, indicated and inferred Bauxite in India are currently placed

at 227 million tonnes, as against 130 million tonnes reported at the time of our last Inquiry. The State-wise break-up is as follows :—

		(Million Tonnes)
Sl. No.	State	
1	Bihar . . . . .	31.24
2	Goa . . . . .	7.17
3	Gujarat . . . . .	22.05
4	Jammu & Kashmir . . . . .	2.61
5	Kerala . . . . .	2.94
6	Madhya Pradesh . . . . .	52.98
7	Maharashtra . . . . .	66.19
8	Mysore . . . . .	16.43
9	Orissa . . . . .	14.93
10	Tamil Nadu . . . . .	8.18
11	Uttar Pradesh . . . . .	2.22
TOTAL .		226.94

4.7.2.2. We have been informed that the question of beneficiation of low grade Bauxite was examined by a Working Group set up by the Advisory Council of Non-ferrous Metals and a detailed exercise was made on the availability of low grade ore in the country vis-a-vis the economics of beneficiation. As a follow-up of the study, it is being proposed to take up beneficiation tests and bulk samples for this have already been collected. Government have in the meantime, approached the U.N.I.D.O. for obtaining the services of an expert to advise on the beneficiation of low grade Bauxite.

4.7.2.3. In order to remove the disparities that prevailed in the policies for the granting of mining leases by the various States to an Industry which has an all India character, we had recommended in our last Report that suitable

action may be taken to include Bauxite in the First Schedule of the Mines and Minerals (Regulation and Development) Act, 1957. This question we are informed was discussed at the 16th Meeting of the Mineral Advisory Board, where the reaction of the representatives of State Governments was not favourable. According to them, the existing provisions already took good care of the interests of the primary users of Bauxite. It was therefore, agreed to maintain the *status quo ante*.

#### 4.7.3. Alumina

4.7.3.1. The total capacity of the four primary producers in respect of Alumina is reported at 2,80,000 tonnes in 1970 as against 2,30,000 tonnes in 1967. However, as the production of Alumina by HINDALCO and INDALCO has been in excess of their declared capacities, the production of Alumina was 3,13,700 tonnes in 1970 as against 1,67,000 tonnes in 1967. In keeping with their expansion plans, the producers expect to increase their Alumina production as indicated below :

TABLE 4  
*Anticipated Unit-wise Alumina Production*

	( '000 tonnes )	
	1971	1975
INDALCO . . . . .	150	225
HINDALCO . . . . .	160	250
MALCO . . . . .	32	64
ALCOP . . . . .	16	46
TOTAL . . . . .	358	585

4.7.3.2. All the producers expect their consumption of Alumina to be a little less than their production, leaving a small surplus with them. Details of capacity, production and consumption by the individual producers from 1967 to 1975 are given in Appendix VIII.

#### 4.7.4. Cost of other Raw Materials

4.7.4.1. All the producers have voiced their concern about the increasing trend of cost of other indigenous and imported raw materials, as is revealed from Table 5 below.

TABLE 5  
Increasing Trend of Cost of certain Raw Materials

(Rs./Tonne)				
	Indigenous		Imported	
	1968	1970	1968	1970
1. Cryolite :				
(i) INDALCO .	5,256	5,230	2,427	2,530
	to 5,258	to 5,714	to 2,467	
(ii) HINDALCO .	5,279	5,441	2,458	3,322
(iii) MALCO .	5,220	5,264	2,402	2,570
(iv) ALCOP* .	5,290	5,294	2,354	2,684
		to 5,707	to 2,655	
2. Aluminium fluoride :				
(i) INDALCO .	6,349	6,350	2,721	3,230
	to 6,386	to 7,259	to 2,741	to 3,833
(ii) HINDALCO .	6,425	6,727	2,820	3,622
(iii) MALCO .	6,332	6,736	2,852	3,011
(iv) ALCOP* .	6,386	6,396	2,793	3,305
		to 7,274	to 2,905	
3. Calcined Petroleum Coke :				
(i) INDALCO .	476	620	..	..
	to 541	to 679		
(ii) HINDALCO .	543	636	..	..
(iii) MALCO .	550	655	606	687
(iv) ALCOP* .	496	613	..	..
4. Pitch :				
(i) INDALCO (Soft)	295	499	..	..
	to 435	to 676		
(ii) HINDALCO (Hard)	382	691	..	..
(iii) MALCO (Hard)	475	614	..	..
(iv) ALCOP (Soft)*	325	476	..	..
	to 360	to 489		

		(Rs./Tonnes)			
		Indigenous		Imported	
		1968	1970	1968	1970
5.	<i>Caustic Soda :</i>				
	(i) INDALCO .	1,005	1,105	..	..
		to 1,060	to 1,154		
	(ii) HINDALCO .	982	1,123	..	..
	(iii) MALCO .	876	1,075	..	..
	(iv) ALCOP* .	1,038	1,256	..	..
		to 1,142	to 1,330		
6.	<i>Furnace Oil : (Rs./kilo litre)</i>				
	(i) INDALCO .	179	189	..	..
		to 241	to 306		
	(ii) MALCO .	217	247		
7.	<i>Fluorspar :</i>				
	(i) INDALCO .	..	..	786	801
				to 843	to 1,039
	(ii) ALCOP* .	..	..	859	1,108
8.	<i>Carbon Cathode block :</i>				
	(i) INDALCO .	..	..	2,960@	3,333
	(ii) ALCOP* .	..	..	2,835	3,962

Source : Producers' replies to questionnaire.

\*Financial year figures.

@1969 cost.

4.7.4.2. In this connection, the Department of Mines and Metals has informed us that as a result of cost study undertaken by the Ministry of Finance (Cost Accounts Branch), it was possible to prevail upon M/s. Navin Fluorine Industries, till recently the only indigenous manufacturer of Cryolite and Aluminium fluoride, to reduce, with effect from 1-1-1971, the price of Cryolite from Rs. 5,400 to Rs. 5,000 per tonnes and that of Aluminium fluoride from Rs. 6,900 to Rs. 6,400 per tonne. In our last Report we had pointed out the tariff anomaly which existed viz., that "the duty on Cryolite and Aluminium fluoride is 27½ per cent *ad valorem* Standard and 17½ per cent *ad valorem* Preferential under

Item No. 28 of the I.C.T. Schedule while the duty on the raw material required for their production is 60 per cent." *We had then recommended that this needed to be rectified and the duty on the raw material should be brought down to the same level as that of the finished material.* The Department of Mines and Metals has informed us that the Department of Revenue and Insurance in the Ministry of Finance was initially not agreeable to reduce the duty on Fluorspar imported for the manufacture of Cryolite and Aluminium fluoride. However, it has been added that on a similar recommendation made recently by the Working Group on Aluminium, that Department had agreed to re-examine the matter.

4.7.4.3. As regards Pitch, we are told that a meeting was arranged between the representatives of Hindustan Steel Ltd., and the Aluminium producers to settle the question of its supply, quality and price and that the former had agreed to meet the requirements of the latter to the extent possible. All the producers have pleaded for an urgent consideration of the stepping up of the capacity of the Bhilai plant. We are also informed that M/s. India Carbon Ltd., which submitted an application for industrial licence for the manufacture of pre-baked Carbon cathode blocks and plates, have been advised by the Department of Industrial Development to negotiate with the National Metallurgical Laboratory, Jamshedpur, for necessary know-how and to submit a capital goods application for the import of such equipment as were not indigenously available. In the meanwhile, the D.G.T.D. is also examining whether pre-baked Carbon blocks and plates could be manufactured with the existing available facilities with M/s. Graphite India Ltd.

#### 4.8. *Electric Power*

4.8.1. Electricity forms one of the largest items of cost in the production of Aluminium. The actual consumption



of power per tonne of the Primary Metal produced by the individual manufacturers during the last three years is shown below :

TABLE 6

*Electric Power ('000 KWH) consumed per tonne of Primary Metal produced*

	1968	1969	1970
<b>INDALCO</b>			
(For smelting & Alumina production) . . . . .	20.6	20.2	20.2
<b>HINDALCO</b> . . . . .	17.2	17.3	17.3
<b>MALCO</b> . . . . .	18.7	20.2	21.0
<b>ALCOP</b> (Financial year figures) . . . . .	21.7	22.7	23.5

It would be seen that while the consumption of INDALCO and HINDALCO has remained steady, that of MALCO and ALCOP has been increasing every year.

4.8.2. Three of the four producers have brought to our attention the serious difficulties they are encountering regarding rates of the power supply to them.

4.8.2.1. *HINDALCO*.—The U.P. State Electricity Board is unable to meet the Company's requirement of contracted quantity of 55 MW on the ground of insufficient rains. Year-after-year, the Board is imposing power cuts and supplying power in lieu of the cut at a higher price. Even during 1971 a 25 per cent cut has been imposed by the Board. Besides this they charge a penal rate on another 15 per cent. At the time of the shutdown of a generator at the Renusagar Power Co. Ltd., (its Subsidiary) the Company had to take emergency power supply from the U.P. State Electricity Board. The rate of this power came to 8/10 paise per unit. The result is that the average price of power per ton of Metal produced is extremely high for this producer. Even for expansion, the Government of U.P. has agreed to supply increased

power only for an interim period of four years during which time, they desired the Company to expand its Renusagar Power Station.

4.8.2.2. *ALCOP*.—The power supply agreement of the Company with the Durgapur Project Ltd., expired on 30-6-1970. The Company was therefore asked to take its requirements from the Damodar Valley Corporation (DVC) with effect from 1st July 1970. DVC has fixed its power rates still higher and has also imposed 15 per cent surcharge on them with effect from 1st February 1971. All these rates were subject to fuel surcharge which was increasing from time to time as the prices of coal and fuel were increasing. Besides there was a heavy burden of Electricity Duty charged by the West Bengal Government. All this resulted in increase of 70 per cent in the cost of power to the Company as compared to 1970, when rates were already higher as against those which other Aluminium producers in different States were paying. This abnormally high power rate charged to the Company was adversely affecting its cost of production and financial position.

4.8.2.3. *MALCO*.—The Government of Tamil Nadu have sanctioned concessional rate for electricity for the first 10,000 tonnes for the first ten years of operation and also concessional rate at a higher cost for the expansion to 25,000 tonnes. They have however insisted on charging surcharge and duty. The Company was availing of electricity at the rate of Rs. 155 per KVA per annum in respect of Alumina Extraction Plant for a period of five years with effect from 17-1-1965. The Company has now received a communication from the Government of Tamil Nadu that the rate for power supply would be revised from 17th January 1970. It has also been informed that any rate less than Rs. 550 per KVA per annum would not be economical to the Tamil Nadu Electricity Board.

4.8.3. *The difficulties connected with the supply and tariffs for power to this Industry have been brought to the notice of the Commission in many of its previous Inquiries and suitable remedial measures were suggested by the Commission successively. We are however constrained to remark*

*that their implementation has not been adequate. The evidence received by us during this Inquiry has given us an impression that very little had been achieved in the matter of alleviating the difficulties of the Aluminium Industry both in regard to the rates and supply of electric energy. In the context of the huge expansion programme in store for this Industry, during the next few years, we are of the view that the producers' electricity needs call for a more realistic appreciation.*

5.1. Rolled products cover a wide range of items but  
 5. Rolled as mentioned in paragraph 3, we are con-  
 Products. fining this Inquiry only to sheets, circles, strips  
 and foils.

### 5.2. *Sheets, Circles and Strips*

5.2.1. When we conducted our last Inquiry, the total installed capacity of this sector consisting of 15 producers on the D.G.T.D.'s list was assessed at about 50,000 tonnes. There was no clear data available relating to the Small Scale Sector.

In addition INDALCO had a licence for setting up a rolling capacity of 11,500 tonnes at Kalwa to be synchronised with the completion of the first stage of its Belgaum Smelter.

5.2.2. As on previous occasions we have had the same handicap during this Inquiry too as no clear picture about this Sector—both in the large scale and small scale—is available before us. The response to the general questionnaire issued by us to various units has been very poor and hence our assessment, mostly based on the information furnished by the D.G.T.D., is by no means comprehensive. These together with the capacity figures adopted by us in the last Report are given in Table No. 7. Wherever the units have furnished the data of production, these have been adopted while for others, we have accepted the D.G.T.D.'s figures.

TABLE 7

## Installed Capacity and Production of Sheets, Circles and Strips

Name of the Producer	(Tonnes)				
	Installed Capacity		Production during		
	Adopted in 1968	Adopted for 1971	1968	1969	1970
1. INDALCO	18,000	18,000	17,214	17,913	19,092
2. ALCOP	4,900	4,400*	3,010*	1,895*	2,524*
3. HINDALCO	20,000	20,000	9,383	11,162	15,922
Sub-TOTAL (i)	42,900	42,400	29,607	30,970	37,538
4. Bralco Industries (P) Ltd. (Successor to Devideyal Metal Industries)	1,800	2,400	1,820	1,902	1,226
5. Metal Rolling Works (P) Ltd. Bombay	2,536	N.A.	1,936	1,640	1,627
6. Popular Metal Works & Rolling Mills, Bombay	600	600	586	616	553
7. Rashtriya Metal Industries Ltd., Bombay	1,500	1,500	25	8	12
8. Mysore Premier Metal Factory, Bombay	750	N.A.	284	@	@

TABLE 7—Contd.

Name of the Producer	Installed Capacity		Production during			(Tonnes)
	Adopted in 1968	Adopted for 1971	1968	1969	1970	
9. Hoosini Metal Rolling Mill (P) Ltd., Bombay	N.A.	N.A.	394	460	336	
10. Shri Mahesh Metal Works, Kishangarh	N.A.	N.A.	42	34	9	
11. Agarwal Metal Works (P) Ltd., Rewari	N.A.	N.A.	205	196	205	
12. N. M. Metal Industries, Bombay	N.A.	N.A.	400	487	558	
13. Shibu Metal Works, Jagadhri	N.A.	N.A.	N.A.	N.A.	N.A.	
14. Naranlala Metal Works, Nawsari	N.A.	N.A.	20	6	..	
15. Prakash Metal Industries	..	N.A.	..	186	195	
16. J. B. Metal Industries	..	..	..	..	33	
SUB-TOTAL (ii)	7,186	4,500	5,712	5,535	4,754	
TOTAL (i) + (ii)	50,086	46,900	35,319	36,505	42,292	

@Not functioning.

\*Source : D. G. T. D.

### 5.2.3. Future expansion

5.2.3.1. Two of the primary metal manufacturers namely INDALCO and MALCO hold licences for 11500 and 3500 tonnes respectively of Semis manufacture. The former is expected to go into production at Taloja (in Maharashtra) by 1971-72 while the latter capacity is expected to materialise by 1973. It is also understood that expansion of INDALCO's Belgaum plant beyond 40,000 tonnes would be accompanied by extension of semi-fabricating facilities. Furthermore an application of HINDALCO for substantial expansion of its capacity for fabricating plant to 60,000 tonnes was under consideration of Government. Apart from the above Bharat Aluminium Co. hold a licence for the manufacture of 50,000 tonnes per annum of Aluminium rolled/extruded products at its Korba Plant.

5.2.3.2. Rolled products are also manufactured in the small scale sector. We could not get any reliable and consolidated data pertaining to this sector and our experience in the past Inquiries too has been the same. *We are of the view that no estimation of demand or study of consumption patterns or other projections, would be complete without a proper assessment of the performance of the small scale sector. We would therefore, recommend that the concerned Ministry in the Government should take early steps or a proper evaluation of the small scale sector.*

### 5.3. Aluminium Foils and Container Sheets

5.3.1. India Foils Ltd. continues to be the major producer of Aluminium foils followed in order by INDALCO and ALCOP. The operational data of these three units are as follows :—

TABLE 8

*Capacity and Production of Foils, including Container Sheets*

Unit	(Tonnes)				
	Capacity		Production		
	1968	1971	1968	1969	1970
India Foils Ltd.	4,200	4,200	3,209	3,499	3,313
INDALCO .	2,500	2,500	1,417	2,195	2,766
ALCOP .	500	500	283	148	237
TOTAL .	7,200	7,200	4,909	5,842	6,316

5.3.2. We understand from the Department of Mines and Metals that the application of General Industrial Society, New Delhi, referred to in our last Report, was rejected in 1968. Two other applications were also rejected in each of the succeeding years.

6.1. Consumers have generally expressed satisfaction over the quality of indigenous products. Some of the Conductor manufacturers, however, were of the opinion that occasionally the material was not found suitable for export requirements. It also appears

**6. Quality and Standards.**

that none of the indigenous Aluminium producers is prepared to guarantee that their rods would give wires with the minimum 61 per cent conductivity, unlike their counterparts abroad. It has been represented that the quality of rolled products fabricated by manufacturers other than primary producers varies in degrees. Inconsistency in temper and de-oiling and dull finish in the case of container sheets have also been reported. The producers have stated that complaints regarding quality of their products were rare and that these were looked into in the normal course. They have apprised us of the quality control measures at various stages of production. The Department of Mines and Metals has not offered any comments on quality. *By and large, therefore,*

*as at the time of our last Inquiry, the quality of the indigenous primary Metal seems to be satisfactory although for sheets and circles there appears to be further room for improvement.*

6.2. Since our last Inquiry the I.S.I. has prepared or revised 11 additional/draft standard specifications. These are listed in Appendix-IX. Although none of the primary Metal manufacturers appears to have joined the Certification Marks Scheme, they claim that most of their products were covered by the specifications formulated by I.S.I. *In this case it would be in the interests of the producers themselves to whole-heartedly join the I.S.I. Certification Marks Scheme and thus obtain official authorisation of the quality of their products.*

7.1. *Import Control Policy.*—During the licensing period 1971-72 import of E.C. grade Aluminium only is allowed to “Actual Users” on restricted basis in view of the domestic shortage. As an export promotion measure, imports of Aluminium are also allowed to registered exporters of Aluminium products. Moreover, the imports are now fully canalised through M.M.T.C. to meet the requirements of all industries both in the priority and non-priority sectors.

7.2. *Export Control Policy.*—Prior to the middle of 1968, the primary producers of Aluminium were required to export at least 10 per cent of their production, the export being confined to Commercial grade Aluminium and semts. We are informed that following the recession during 1968, requests were received from the producers that permission may be extended to the export of E.C. grade Metal and properzi rods as well. Taking into account the then surplus availability of indigenous Aluminium Metal, it was decided that Aluminium Producers could export Aluminium both Commercial and E.C. grade under certain conditions. Having regard to the changed Aluminium supply position in the beginning of 1970 and in view of the shortage prevailing then due to picking up of the demand particularly in the Cable/Conductor Industry after the recession, it was decided that for the licensing period 1970-71 export of Commercial grade



Aluminium only would be allowed on merits, so that past commitments could be honoured and the overseas markets established by the Aluminium producers were not upset. Export of E.C. grade Aluminium and properzi rods was, accordingly banned. In view of the continued shortage during 1971-72 also, the export of E.C. grade Aluminium and properzi rods remains banned and that of Commercial grade Aluminium by primary producers and of semis in different forms is allowed "On Merits", for the reasons mentioned for the previous licensing period.

### 7.3. Imports and Exports

7.3.1. The quantity and value of imports and exports of Aluminium during 1968, 1969 and 1970 are shown below :

**TABLE 9**

*Statistics of Foreign Trade (1968 to 1970)—Aluminium*

Product/Year	Imports		Exports	
	Quantity ('000 tonnes)	Value (Rs. in lakhs)	Quantity ('000 tonnes)	Value (Rs. in lakhs)
<b>(a) Aluminium Alloy-Unwrought</b>				
1968	11.0	419.3	14.0	471.8
1969	1.4	59.0	12.2	473.7
1970	3.2	151.5	2.6	158.4
<b>(b) Aluminium &amp; Alloy-Worked*</b>				
1968	2.3	183.5	3.1	145.1
1969	0.7	68.1	8.3	351.3
1970	0.8	75.5	9.0	415.4
<b>TOTAL</b>				
1968	13.3	602.8	17.1	616.9
1969	2.1	127.1	20.5	825.0
1970	4.0	227.0	11.6	573.8

Source : D. G. C. I. & S.

\*This includes unconverted figures of A. C. S. R.

7.3.2. The imports have been mainly from the U.S.A., Canada, the Federal Republic of Germany and Norway, while exports have been mostly to East European countries, the Middle East, South East Asian and African countries and also to Canada and Japan.

7.3.3. Aluminium is a priority Industry for purposes of import of capital goods and raw materials. The Industry is given some direct imports of raw materials in terms of the Import Trade Control Policy issued from time to time. It is not given any special treatment regarding taxes and duties, foreign exchange etc.

7.3.4. The Industry has pointed out that in 1968, it suffered from excessive imports and in 1969 exports became necessary in order to avoid cut-backs in production. It has, therefore, pleaded that a close correlation between imports and demand and production should be maintained. Even if certain exports of Aluminium might be allowed in order to retain the foreign markets already built up, it was feared that making the export of semi-fabricated products mandatory as a condition for importing essential equipment would discourage investment in the semi-fabricated sector of the Industry, capacity of which was not yet commensurate with that of the expanding ingot capacity.

7.3.5. With regard to the prospects of building up export market for Aluminium, while INDALCO appears to be diffident, HINDALCO and MALCO are of the view that there was great scope for earning substantial foreign exchange. Among the primary producers, HINDALCO alone was able to export a total of about 26,000 tonnes to 21 countries during 1968, 1969 and 1970. The Industry has, therefore, asked for export incentives in various forms such as cash subsidies, drawback on duty and preferential treatment in importing raw materials. Consumers of Aluminium, some of whom are also exporters, have also complained about the fluctuating policy and delays in revising drawback rates etc., and have asked for liberal promotional facilities. *We feel that the export policy should be formulated on a long-term basis and the procedures less time consuming.*

8.1. Aluminium and its products were not subject to any controls till 1967. In August 1967 an informal price agreement was entered into with the primary producers of Aluminium, according to which a part of the then prevailing Excise duty was absorbed by the producers.

#### 8. Prices.

However, following the rationalisation of Excise duty after the Budget proposals of 1970-71, two of the major producers insisted on an increase in their ex-factory prices. Pending examination of the price structure of the Industry by the Working Group under the Bureau of Industrial Costs and Prices, Government passed the Aluminium (Control) Order, 1970 on 20th March, 1970 and stabilised the ex-factory prices of Aluminium at the pre-Budget price level (exclusive of Excise duty) as follows:—

Unit	(Rs. per tonne)	
	E. C. Grade	Commercial Grade
INDALCO . . . . .	3,990	3,970
HINDALCO . . . . .	4,405	4,355
MALCO . . . . .	4,600	4,600
ALCOP . . . . .	..	5,050

8.2. The Working Group examined the cost of production of all primary producers and three selected secondary manufactures of fabricated products of Aluminium and submitted its report in November 1970. Government's Resolution thereon was published in May 1971. The uniform prices of Aluminium ingots for all manufacturers, recommended by the Working Group, were accepted by Government and were notified on ex-factory-cum-Excise duty basis effective from 24th May, 1971 as follows:—

(Rs. per tonne)	
E. C. Grade 1 }	5,187
E. C. Grade 2 }	A premium of Rs. 65 will apply for purity of 99.7% and above.
Commercial Grade	
	51,61

The above prices include dealers' commission and the Excise duty of Rs. 1197 and Rs. 1191 respectively. The two small manufacturers, namely ALCOP and MALCO are given an Excise duty rebate of seven and a half per cent of the price recommended for Aluminium ingots equivalent to about Rs. 290 per tonne.

8.3. The manufacturers have stated that the prices fixed under the Control Order were not fair and remunerative, but we are not going into this aspect, as this Inquiry is purely confined to the broad question of protection to the Industry and also because the prices fixed now are on the basis of a very recent investigation by Government into the cost structure of the units.

8.4. We have received a few c.i.f. price quotations from the consumers and the M.M.T.C. in respect of E.C. grade Aluminium ingots imported by them from U.S.A./Canada during 1970. These are given below :

Name of the Consumer	C.i.f. Price	(Rs. per tonne)	
		Clearing charges	Landed cost ex-duty
M/s Indian Aluminium Cables Limited, New Delhi . . . . .	4,432	100	4,532
M/s Power Cables Private Limited, Bombay . . . . .	4,425	50	4,475
M. M. T. C. . . . .	4,542	N.A.	N.A.

9.1. The four Companies manufacturing Aluminium ingots were requested to furnish details of their costs of production. Because of the time factor and as this Inquiry is mainly related to the question of protection the cost data supplied were not verified by personal investigation at the units by our Cost Accounts Officers. These were however, duly scrutinised and necessary adjustments made to conform to the policies/practices followed by the Commission.

#### 9. Cost of Production.

9.2. It is observed that ALCOP has suffered badly due to unprecedented labour unrest and forced closure of its plant in 1969-70. Consequently, the production in 1969-70 and 1970-71 has been much lower than that in 1968-69. The Company has also stated that this adverse situation still continues. The capacity of this unit is also low being 9,000 tonnes per annum only. In view of this the costs of this unit are not representative and have not therefore been considered for the purpose of comparative data.

9.3. The costs for the year 1970 in respect of the other three producers, namely, INDALCO, HINDALCO and MALCO are presented in Table No. 10 in comparison with the estimates of the Commission, as given in its 1968 Report. The details of the installed capacity and the actual production are also indicated in that Table together with the percentage of utilisation of capacity. The costs of production of MALCO were not investigated during the previous inquiry. Hence the earlier data regarding estimates of cost of production are not available for comparison in this case.

9.4. The cost data furnished by the Companies revealed that in the case of INDALCO the raw material costs were very high in 1970, being Rs. 2,064.00 per tonne of Aluminium ingot as against the last estimate of the Commission at Rs. 1,607 per tonne. This Company has recently started production at its new unit at Belgaum and as local Bauxite has not started flowing in, inadequate quantities, this unit had resorted to buying Alumina from within the country at a delivered cost of Rs. 1,068.00 per tonne and also imported it at a landed cost of Rs. 1,147.00 per tonne resulting in the average delivered cost of Rs. 940.00 per tonne at the Smelter at Belgaum and an overall average of Rs. 712.00 per tonne for all the units of this Company. The Belgaum unit is still to come up to optimum production and the costs are therefore relatively high. The average cost of Alumina of the other two units of this Company (i.e. Alupuram and Hirakud) is found to be Rs. 530.00 per tonne as against the Commission's estimate of Rs. 503.00 per tonne in 1968. If the figure of Rs. 712 was to come down even to Rs. 530.00 per tonne of Alumina, the cost of Aluminium ingots would be lower by Rs. 350.00 roundly per tonne and the ex-works cost would

come down to Rs. 3,233.00 and would then be comparable with the cost of Rs. 3,394.00 per tonne of HINDALCO. The incidence of depreciation of this Company is also high because of the capital cost of the new unit at Belgaum which has yet to reach the optimum level.

9.5. In the case of HINDALCO costs of power have been higher which is understood to be due to shortage of supplies at concessional rates, rising electricity charges as well as higher cost of self-generated power. To supplement its requirements the Company is expanding its own power generation but this is not likely to reduce the impact on the cost of power.

9.6. In the case of MALCO, the cost of Alumina is found to be very high. This is because of the low grade of local Bauxite and the necessity for mixing it with superior Bauxite obtained from Gujarat, involving heavy expenditure on transport. During the discussions it was learnt that the Company had since evolved its own technique for beneficiating the low grade ore locally available to it, thus reducing, if not altogether eliminating, the need for mixing it with the more concentrated Gujarat ore. It was stated by the Company's representatives that after allowing for the extra cost of upgrading the local ore, adoption of this technique would result in a cost saving by about 25 per cent in the total cost of Alumina. If this economy is taken into account the ex-works of Aluminium ingots, shown in Table 10 would work out to about Rs. 3,398.00 per tonne, which is comparable with the actual costs of Rs. 3,394.00 per tonne of HINDALCO.

9.7. All the three Companies have embarked on programmes for progressive expansion of their capacities as indicated earlier in paragraph 4.4. These expansion programmes should also contribute to some cost reductions, other things being equal, and thus bring down appreciably below the 1970 adjusted weighted average figure of costs of Rs. 3,330.00 (roughly) per tonne.

**TABLE 10**  
*Cost of Production of Aluminium Ingots*

( ) (Per Tonne)

Name of the Company	INDALCO		HINDALCO		MALCO Actual 1970
	Com- mission's Estimate '68	Actual 1970	Com- mission's Estimate '68	Actual 1970	
<b>Details</b>					
(A) INSTALLED CAPACITY (Tonnes)	37,675	66,170	60,000	80,000	12,500
(B) PRODUCTION (Tonnes)	37,675	61,295	60,000	78,191	13,154
(C) UTILISATION ( % )	10.0	9.26	100	97.7	105.2
<b>Cost of Production :</b>	<b>Rs.</b>	<b>Rs.</b>	<b>Rs.</b>	<b>Rs.</b>	<b>Rs.</b>
(i) Raw Materials	1,607	2,064	1,605	1,557	2,348
(ii) Power	434	445	857	1,011	388
(iii) Other Conversion Charges	644	491	451	352	448
(iv) Total	2,685	3,000	2,913	2,920	3,184

(v) Depreciation . . . . .	238	583	503	474	562
(vi) Excise Duty Absorption & Credit . . . . .	144	.. (-)	43	..	..
(vii) Total Cost . . . . .	3,037	3,583	3,375	3,394	3,746
(viii) Contingency . . . . .	134	..	146	..	..
(ix) TOTAL Ex-works Cost . . . . .	3,171	3,583	3,519	3,394	3,746
(x) Ex-works Adjusted Cost . . . . .	..	3,233	..	3,394	3,398
(xi) Weighted average of the three Companies = 3,330.00 (roundly).					

[N.B.—(i) Tax Credit for increased production over 1964-65 levels has been discontinued from 1970-71.  
(ii) Depreciation is adjusted on reducing balance method.]

Source of Actuals for 1970 :—Replies of the Companies to the Commission's Cost Questionnaire.



10.1. Earlier in Paragraph 8 we have given the details of a few c.i.f. price quotations received by us and the ex-factory selling prices of the indigenous Metal fixed under the Aluminium Control Order. The Table below gives a comparison of the net ex-factory price with the present landed cost ex-duty of E.C. grade Aluminium.

10. Protection.

TABLE 11

*Comparison of E.C. grade Aluminium ingot prices*

(Rupees)

(i) Landed cost <i>ex-duty</i>	4,532	4,475
(ii) Net <i>ex-works</i> price of indigenous Metal	3,990	3,990
(iii) Difference : (i) — (ii)	542	485

NOTE.—MALCO and ALCOP are entitled to a rebate on Excise duty equivalent to Rs. 290.00 per tonne.

10.2. The above comparison *prima facie* rules out the need for continuance of fiscal protection to this Industry. We have, however, observed lack of unanimity in the views received by us on this issue. All the producers have pleaded for an extension of protection for a few more years ranging from three to five. In their view, some of the main disadvantages namely (i) smallness of size, (ii) relatively higher cost of Alumina and power, (iii) the rising costs of other inputs and more particularly of, (iv) capital outlays for the post-devaluation expansion programmes already completed or in the process of implementation, accompanied by the comparatively higher cost of finance, which bedevilled it are likely to continue in the near future.

10.3. INDALCO has further pointed out that the imported raw materials and machinery and equipment were expensive because these were subject to substantial Customs duties, which had been further raised in the 1971 Budget. HINDALCO has added that the over all capital costs in India rise further in many cases due to the producer

having to make its own arrangements for generating power and for providing housing and other facilities, besides high interest rates for borrowings. HINDALCO, MALCO and ALCOP have further averred that cost of power and fuel was higher in India than in foreign countries. According to ALCOP domestic price of Bauxite worked out higher because of high internal freight rates and various Governmental impositions. It has also expressed the fear of dumping, stating that although the currently ruling world market quotations for Aluminium metal were equivalent to 28 U.S. cents per lb (Rs. 4,600.00 per tonne) actual deliveries were being made at the lower price ranging between 22-24 U.S. cents per lb (i.e. Rs. 3,600-3,900 per tonne). So long as this domestic Industry was subjected to these adverse cost factors, they pleaded that the existing fiscal protection to it should continue. Bharat Aluminium Co. in its reply to the Commission's questionnaire, has also requested for continuance of protection to the Industry. These points were further elaborated by the producers during the joint discussions with them on 25th August, 1971. It was also stressed that in reality the effective period of protection should be reckoned at only ten years i.e. from 1961, (as in the earlier years the indigenous production was very small) and not for over twenty years. By and large, the State Governments who have replied to our questionnaire have also favoured continuance of protection.

10.4. Consumers, however, are divided on this issue. Some of them are of the opinion that the Industry was still expanding and limited quantity of imports were inevitable to meet the growing demand within the country. Hence it would be necessary to give the Industry all assistance and further protection till such time as imports could be done away with altogether. On the other hand, one of the conductor manufacturers has started that the imports of E.C. grade Aluminium were now canalised through the M.M.T.C. whose prices were already high and release orders were issued by Government only after thorough scrutiny of requirements. A long standing consumer of sheets and circles has opined that the indigenous Industry had reached a state of self-sufficiency and availability position of the Metal would ease further with substantial increase in its capacity. It has been added that with the existing high Customs duty and countervailing Excise levies,

the imported product was already costlier to the consumer. They have therefore, asked for discontinuance of protection to the Industry. These views are also shared by a few other consumers.

10.5. The Department of Mines and Metals is of the opinion that as the Aluminium industry had made considerable progress during the last few years and near self-sufficiency was likely to be reached by the end of the Fourth Plan or in the beginning of the Fifth Plan, there seemed to be little need to continue protection to the Industry, especially as import duty for purposes of revenue would continue to be levied.

10.6. The Aluminium Industry has been enjoying protection for over two decades now. The increase both in capacity and production of the Industry during this period has been spectacular as may be seen below.

					(Tonnes)
Year					Capacity      Production
1952	.	.	.	4,000	3,554
1960	.	.	.	18,000	18,120
1970	.	.	.	1,69,000	1,61,081

10.7. Whereas the rate of growth in the fifties was gradual, the Industry expanded very rapidly indeed during and after the Second Plan period. The Table below gives a comparison of India's progress with that of two developed countries and the world in general during the last decade, while the graph on the next page illustrates the position.

Table 12

*Index numbers of Production quantum of Aluminium ingots*

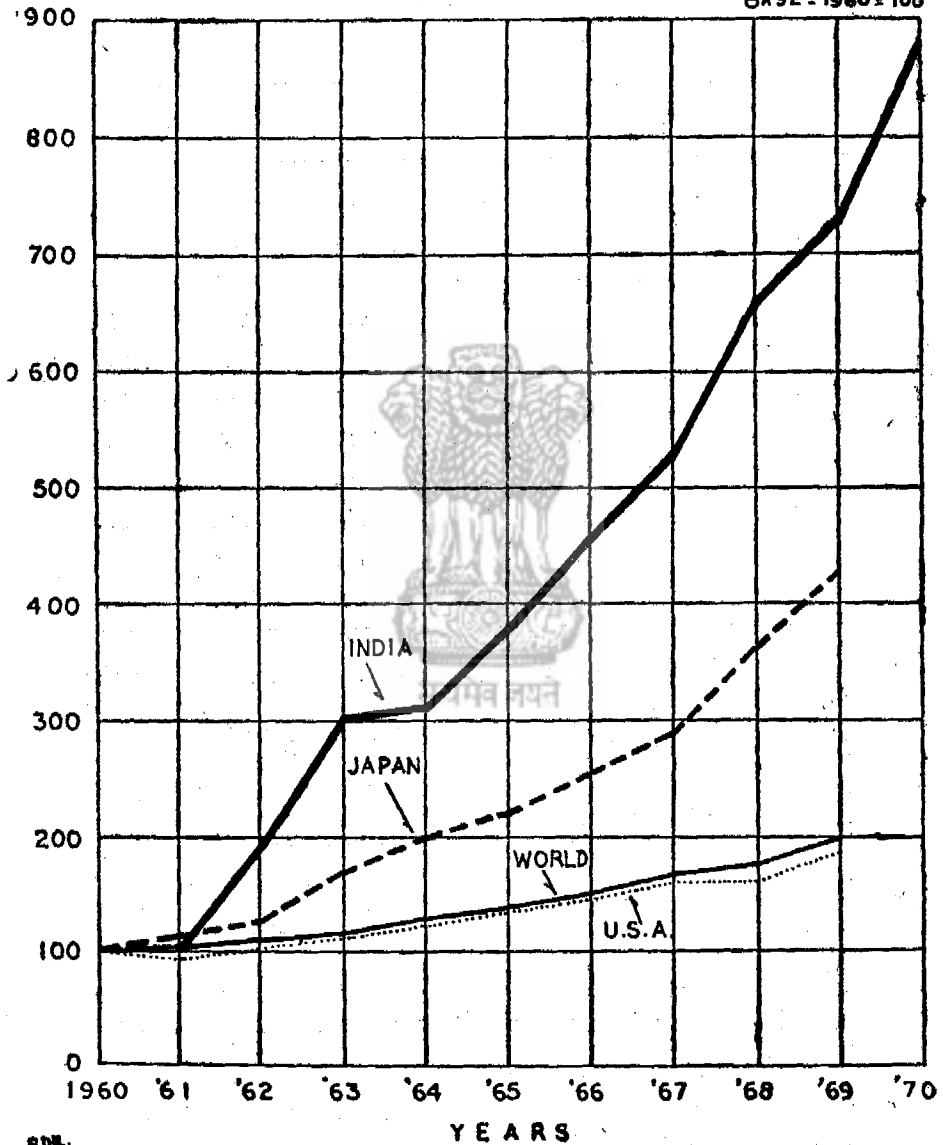
(Base year 1960=100)

Year	India	Japan	U.S.A.	World
1960 . . .	100	100	100	100
1961 . . .	101	116	94	105
1962 . . .	193	129	105	113
1963 . . .	303	169	115	118
1964 . . .	313	201	127	132
1965 . . .	381	223	137	140
1966 . . .	462	255	147	153
1967 . . .	533	289	162	169
1968 . . .	663	364	162	179
1969 . . .	732	431	188	202
1970 . . .	889	N.A.	N.A.	N.A.

10.8. In the matter of capacity utilisation too, as the figures in paragraph 4.3 indicate, this Industry should be proud of its achievement, as compared to the performance of many domestic industries such as Iron and Steel, other non-Ferrous Metals or Engineering industries as also the world Aluminium industries. Clearly in an Industry producing a basic item like Aluminium, the elasticity of demand has been and is likely to continue for quite sometime to come, especially in a developing economy like ours, to be well over unity. There should thus be little apprehension in the foreseeable future, of its facing the problem of under utilisation of installed capacity. Even the rather conservative estimates received from the Industry, signify a steep rise in the demand for this Metal. With a view to meeting this growing demand, capacities have been suitably licensed for expansion and during the next five years, the production is expected to cross the four lakhs tonnes mark.

INDEX OF PRODUCTION OF ALUMINIUM INGOTS

BASE = 1960 = 100



10.9. Financial analysis of the working of the manufacturing units for the last three years reveals that the Industry is in a sound and reasonably comfortable position as after paying adequate dividend on Equity Capital, it has reduced its borrowings, built up large Reserves and progressively expanded its capacity and production. Details are given in Appendix X.

10.10. Thus viewed from the purely economic angle, and having particular regard to its performance and prospects both as regards cost efficiencies already achieved in spite of certain inherent drawbacks due to the operation of inflationary forces within a developing economy, as well as the emerging trends which are likely to further strengthen its competitive efficiency, *we are of the opinion that the Industry has already come of age and outgrown the need for further fiscal protection.*

10.11. We have also examined the question from the broader angle of indigenous cost of production. Unlike our practice of deputing our own costing personnel to the units for cost investigation, we had for this Inquiry called for comprehensive cost data from all the manufacturers through a cost questionnaire and these were analysed and as mentioned earlier adjusted in conformity with our general practice. The analysis of the cost data supplied to us reveals that the indigenous cost of production of this Metal was definitely lower than the reported c.i.f. prices. The latter received from M.M.T.C. and a few consumers pertaining to the year 1970 were around Rs. 4400 a tonne, whereas the ex-works actual cost of the three units, excluding Return, worked out to between Rs. 3400-3700 a tonne for the same year.

10.12. As mentioned earlier, the fair selling prices of the primary Metal fixed under the Aluminium Control Order are Rs. 5161.00 for Commercial grade and Rs. 5187.00 for E.G. grade per tonne. Except ALCOP, none of the producers is allowing any dealers' commission on this and even ALCOP, it appears, is meeting this out of the ex-factory price. The Central Excise duty on the two categories of the Metal is Rs. 1191.00 and Rs. 1197.00 per tonne respectively. If this duty element is taken out of the selling price, the net ex-factory price comes to Rs. 3970.00 for Commercial grade and

Rs. 3990.00 for E.C. grade Aluminium ingots per tonne (the two small producers namely, ALCOP and MALCO are in addition entitled to an Excise duty rebate equivalent to Rs. 290 per tonne). Compared to this the landed cost ex-duty ranges between Rs. 4475.00 and Rs. 4532.00 per tonne.

10.13. In the course of their joint discussions with the Commission the manufacturers of the primary Metal were inclined to agree that upto a point the domestic product stands in a comparatively advantageous position in terms of cost and the final price of ingots. They, however, contended that during the last one year the cost of production had gone up significantly through increase in prices of essential raw materials, Excise duty, freight charges, power tariffs etc. It was further argued that whereas the prices of Aluminium were controlled, the essential raw materials going into its manufacture were not subject to any kind of control and hence in terms of prices of raw materials and power, the domestic Industry was at a considerable disadvantage. We had suggested to them to substantiate these statements in relation to the usages and prices of Bauxite, Cryolite, Aluminium Fluoride, Caustic Soda and power tariffs to Aluminium producers in other countries. But this information was not readily forthcoming. Thus we had perforce to base our judgement on a comparison between the ruling c.i.f. price quotations of imported Aluminium, and the ex-factory costs and prices of the Indian producers. Moreover, as their sanctioned expansions are completed and the other efforts that are being made by them towards cost reduction materialise, there are cogent reasons for hoping that their technical and cost efficiencies would show some further improvement.

10.14. Their apprehensions about possible unfair competition by foreign suppliers taking undue advantage of the abolition of fiscal protection, would have acquired greater significance only if Government were to withdraw the prevailing import restrictions. However, as we see it, such a possibility does not in practice exist. Nor is it likely to come about in the near future. On the contrary, as things stand, E.C. grade Aluminium which forms the bulk of production and consumption, is a controlled commodity not only in respect of its price and distribution but also of imports. Moreover,

imports are canalised through a State Agency. These regulations should act as a sufficient safeguard against any market disruptions through possible unfair external competition.

10.15. During the course of our discussions, we had also specifically sought to know from the Industry what exactly underlay their apprehensions as regards the withdrawal of fiscal protection. As far as we could make out, the source of these misgivings were more psychological than material. They felt that the larger world producers, with a fair amount of surplus capacity may be forced to cut prices below the present quoted levels and the domestic consumers may successfully pressurise the concerned authorities, into letting in a larger volume of imports, than those strictly justified by the shortfall in domestic supplies. Such a development if it takes place would act to their detriment.

10.16. We were happy to learn from them that in pleading their case for the continuance of tariff protection, the Industry did not seek any raising of the existing rates of protective duty. The following statement made by the Finance Minister in the course of his Budget Speech in May last namely that—

“Certain basic raw materials and non-ferrous metals will now on be liable to duty at the uniform rate of 40 per cent. Iron and Steel and unwrought copper will, however, attract the lower duty of 30 per cent”,

should fully reassure them in this regard.

10.17. Moreover as experience in the recent past has shown, in almost every case where the tariff protection had been withdrawn, import duties at near about the prevailing rates as well as quantitative restrictions have had to be maintained on the more general revenue and balance of payments considerations. We foresee little possibility of any sudden withdrawal or reversal of such policies. Hence so long as the production and marketing of Aluminium ingots are carried on efficiently and at reasonable costs, there should be no real reason to fear undue or unfair external competition. We are also of the view that a regulated flow of imports is in fact



desirable as exposure to a modicum of external competition is conducive to the healthy growth of a home Industry. Taking into account all these factors, *we recommend that protection granted to the Aluminium Industry need not be continued beyond 31st December 1971 and that the protective import duties on articles covered by item Nos. 66(a) and 66(1) of the I.C.T. Schedule be replaced by revenue duties at the appropriate rates.*

10.18. In making the foregoing recommendation we are aware of the fact that the Public sector units are yet to go into production. They might be faced with some additional difficulties as new comers to this Industry for the first few years of their existence. If, therefore, having regard to the views expressed by Bharat Aluminium Company and by some of the State Governments, *Government desires to retain a degree of flexibility, it might consider the possibility of continuing to deem Aluminium to be a protected Industry for purposes of Section 11(a) of the Tariff Commission Act, for a further period of three years or so, as has been done in the case of the Dyestuff Industry.*

11.1. Our conclusions and recommendations are summarised below :—  
**11. Summary of Conclusions and Recommendations**

### **11.2. Main Recommendations :**

(i) The Aluminium Industry in India has come of age and outgrown the need for further fiscal protection. Hence, protection granted to the Industry need not be continued beyond 31st December, 1971 and the protective import duties on articles covered under item Nos. 66(a) and 66(1) of the First Schedule to the Indian Customs Tariff be replaced by revenue duties at the appropriate rates.

(Paragraphs 10.10 & 10.17)

(ii) Having regard to the views expressed by Bharat Aluminium Company, the Public sector undertaking, and some of the State Governments, if Government desire to retain a degree of flexibility, it might consider the possibility of continuing to deem the Aluminium Industry as protected within the meaning of Section 11(a) of the Tariff Commission Act, 1951 for a further period of three years or so.

(Paragraph 10.18)

### 11.3. Ancillary Recommendations :

(iii) The present installed capacity of the four manufacturers of Aluminium ingots is around 1.69 lakhs tonnes which is expected to increase to 4.30 lakhs tonnes if all the expansion schemes licensed, including the Public sector units, are implemented.

(Paragraphs 4.2 & 4.4.10)

(iv) Production of Primary Metal during 1968, 1969, 1970 and the first six months of 1971 was 1.20, 1.33, 1.61 and 0.87 lakhs tonnes respectively.

(Paragraph 4.2)

(v) Having regard to the large expansion programmed for this Industry and the importance of its role in economic development, its growing need for adequate supplies of electric energy at economic prices—a point to which attention has been successively drawn by the Commission in its earlier reports, needs re-emphasis.

(Paragraph 4.8.3)

(vi) No estimate of demand or study of consumption pattern or other projections of Aluminium would be complete without a proper assessment of the performance of the small scale sector. It is accordingly suggested that early steps be taken for the adequate collection of data from the small scale sector and an objective evaluation thereof.

(Paragraph 5.2.3.2)

(vii) By and large, the quality of the indigenous Primary Metal seems to be satisfactory although for Sheets and Circles there seems to be some room for further improvement. It would be in the interests of the producers themselves to wholeheartedly join the I.S.I. Certification Marks Scheme and thus obtain official authorisation of the quality of their products.

(Paragraphs 6.1 & 6.2)

(viii) The export policy should be formulated on a long-term basis and the procedures less time consuming.

(Paragraph 7.3.5)

11.4. The recommendation Nos. (vi), (xii), (xv), (xvii), (xviii), (xix) and (xx) appearing in paragraph 1 of the Commission's last Report of 1968, which are yet to be fully implemented, are reiterated for consideration by Government.

12. We wish to thank the manufacturers, consumers, raw material suppliers as well as the concerned Government Departments who furnished us with valuable information in connection with this Inquiry. We also place on record our warm appreciation of the hard work put in by our Officers and staff engaged on this Inquiry.

**Acknowledgements.**



**B. N. BANERJI,**  
**Chairman.**

**F. H. VALLIBHOY,**  
**Member.**

**PRAMOD SINGH,**  
**Member.**

**P. V. GUNISHASTRI,**  
**Secretary.**

**Bombay,**  
**2nd September, 1971.**

## APPENDIX I

(Vide Paragraph 1.4)

*Current rates of duty on aluminium and its manufactures*

### A. Customs Duty

Relevant extracts from the First Schedule to the Indian Tariff Act, 1934 in respect of Item Nos. 66(a) and 66(1) :

Item No.	Name of article	Nature of duty	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of			Duration of protective rates of duty
				The U.K.	A British colony	Burma	
1	2	3	4	5	6	7	8
66	Aluminium manufactures, the following namely : (a) Plates, sheets, circles strips and foil, including foil in any form or size ordinarily used as parts and fittings of tea-chests.	Protective	27½ per cent <i>ad valorem</i>	..	..	..	December 31, 1971.
66(1)	Aluminium in any crude form including ingots, bars, blocks, slabs, billets, shots and pellets.	..	20 per cent <i>ad valorem</i>	..	..	..	Do.

NOTE.—(1) Under Government of India, Ministry of Finance (Department of Revenue), Notifications No. 126-Customs, dated the 20th August 1965, as subsequently amended by Notifications No. 144-Customs, dated the 31st August, 1965, No. 105-Customs, dated the 6th June, 1966, and No. 211-Customs, dated the 23rd December, 1966 the Central Government hereby exempts the goods specified in column 1 of the Table below when imported for the manufacture of aluminium conductors, steel re-inforced or hard drawn stranded aluminium conductors for overhead power transmission purposes, from so much of that portion of Customs duty leviable thereon which is specified in the First Schedule to the Indian Tariff Act, 1934 as is in excess of that specified in the corresponding entry in column 2 of the said table :

TABLE

Description of goods	Rate of duty
Electrolytic aluminium wire bars,	15 per cent <i>ad valorem</i>
Electrolytic aluminium billets, or	
Electrolytic ingots.	

Provided that the importer by the execution of a bond in such form and in such sum as may be prescribed by the Assistant Collector of Customs, binds himself to pay, on demand, in respect of such materials including the wastage that occur during manufacture as are not proved to the satisfaction of the Assistant Collector of Customs, to have been used for the aforesaid purpose, an amount equal to the difference between the duty leviable on such materials but for the exemption contained herein and that already paid at the time of importation.

(2) The amendment by Notification No. 211-Customs, dated the 23rd December, 1966, shall be deemed to have come into force on the 19th November, 1966.

NOTE.—(2) According to the proviso to I.C.T. Item No. 70(1), all non-ferrous alloys and manufactures containing more than 97 per cent of aluminium shall be deemed to be aluminium in a crude form or aluminium manufactures, as the case may be, and dutiable as such.

NOTE.—(3) *Additional duty.*—Under Section 2 of the Indian Tariff (Amendment) Act, 1963, read with Section 22 of the Finance Act, 1963 and Section 26 of the Finance Act, 1969, any article which is imported into India shall, in addition, be liable to additional duty equal to the excise duty for the time being leviable on like articles if produced or

manufactured in India and if such excise duty on like article is leviable at any percentage of its value, the Customs duty to which the imported article shall be so liable shall be calculated at that percentage of the value of the imported article.

**Explanation.**—The expression “the excise duty for the time being leviable on like article if produced or manufactured in India” mean the excise duty for the time being in force which would be leviable on a like article if produced or manufactured in India or if a like article is not so produced or manufactured, which would be leviable on the class or description of articles to which the imported article belongs and where such duty is leviable at different rates, the highest duty.

For the purpose of calculating the additional duty on any imported article where such duty is leviable at any percentage of its value the value of the imported article shall notwithstanding anything contained section 14 of the Customs Act, 1962, be the aggregate of :

- (i) the value of the imported article determined under sub-section (1) of the said section 14 or the tariff value of such article fixed under sub-section (2) of that section, as the case may be,
- (ii) any duty of Customs chargeable on that article under section 12 of the Customs Act, 1962 other than the duty referred to in first paragraph above, and
- (iii) any sum chargeable on that article under any law for the time being in force as an addition to and in the same manner as, a duty of Customs.

**NOTE.**—(4) Under Government of India, Ministry of Finance (Department of Revenue and Insurance), Notification No. 69—Customs, dated the 15th June, 1968, as subsequently amended by Notification No. 72—Customs, dated the 1st April, 1969, 141—Customs, dated the 30th September, 1969 and No. 24—Customs, dated the 1st March 1970 the Central Government hereby exempts the goods specified in column 2 of the table annexed hereto and falling under the item or items of the First Schedule to the Indian Tariff Act, 1934, specified in column 3 of the said Table when imported from the United Arab Republic or Yugoslavia from 50 per cent of that portion of the standard rate of duty of customs specified in the said First Schedule with respect to the afore-said goods, read with any other notifications (for the time being in force) issued with respect to such goods :

Provided that the importer proves (in accordance with the rules of origin of goods referred to in Article III of the India—U. A. R.—Yugoslavia Trade Expansion and Economic Co-operation Agreement concluded on the 23rd December, 1967) to the satisfaction of the proper officer of Customs that the goods in respect of which the benefit of this exemption is claimed are of the origin of the U.A.R. and Yugoslavia.

## TABLE

Sl. No.	Description of Goods	Items No. in the First Schedule to the Indian Tariff Act, 1934
114	Wrought bars, rods, angles, snapes and sections, or Aluminium and Aluminium wire :	66, 66(1), 70(1), 72(12)
	(1) Bars :	
	(a) Of aluminium other than alloys of aluminium	
	(b) Of alloys of aluminium	
	(2) Angles, shapes and sections :	
	(a) Of aluminium, other than alloys of aluminium	
	(b) Of alloys of aluminium	
	(3) Wire :	
	(a) Of aluminium, other than alloys of aluminium	
	(b) Of alloys of aluminium	
115	Wrought plates, sheets and strips of aluminium :	66(a), 70(1)
	(1) Sheets and plates :	
	(a) Of aluminium, other than alloys of aluminium	
	(b) Of alloys of aluminium	
	(2) Strip :	
	(a) Of aluminium other than alloys of aluminium	
	(b) Of alloys of aluminium	
116	Aluminium foil (whether or not embossed, cut to shape, perforated, coated, printed or backed with paper or other reinforcing material) of a thickness (excluding any backing) not exceeding 0.20 mm :	66, 87, 70(1)
	(1) Backed.	
	(2) Others.	

**B. Excise Duty**

Relevant extracts from the First Schedule of the Central Excises and Salt Act, 1944 in respect of Item 27 :

Item No.	Description of goods	Rate of Duty
<b>27 Aluminium</b>		
(a) (i)	In any crude form including ingots, bars, blocks, slabs, billets, sheets and pellets.	25 per cent <i>ad valorem</i>
ii)	Wire bars, wire rods and castings, not otherwise specified.	25 per cent <i>ad valorem</i>
(b)	Manufactures, the following namely, plates, sheets, circles, and strips in any form or size, not otherwise specified.	25 per cent <i>ad valorem</i>
(c)	Foils, that is a product of thickness (excluding any backing) not exceeding 0.15 millimetres.	20 per cent <i>ad valorem</i>
(f)	Containers made of aluminium	25 per cent <i>ad valorem</i>

**Explanation.**—"Containers" means containers ordinarily intended for packaging of goods for sale, including casks, drums, cans, boxes, gas cylinders and pressure containers, whether in assembled or unassembled condition and containers known commercially as flattened or folded containers.

**NOTE (1) : Special Duty :**

Under sub-section (1) of Section 33 of the Finance Act, 1970 the goods of the description mentioned in this section when chargeable with a duty of excise under the Central Excises and Salt Act, 1944 (as amended by the Finance Act or any subsequent Central Act) read with any notification for the time being in force issued by the Central Government in relation to the duty so chargeable, are assessed to duty, there shall be levied and collected...

(b) as respects goods comprised in Item No. 27..... a special duty of excise equal to 20 per cent of the total amount so chargeable on such goods ;...

**NOTE (2) :** Under Government of India, Ministry of Finance (Department of Revenue and Insurance), Notification No. 46/70—Central Excises, dated the 1st March 1970 as subsequently amended by Notification No. 74/70—Central Excises, dated the 26th March 1970



the Central Government hereby exempts aluminium of the description specified in column 3 of the table hereto annexed and falling under sub-items specified in the corresponding entry in column 2 of the said Table of this Item, from so much of the duty of excise leviable thereon as is in excess of the duty specified and subject to the condition laid down in the corresponding entry in columns 4 and 5 respectively of the said Table :

Sl. No.	Sub-Item No.	Description	Duty	Conditions
1	2	3	4	5
1	(b) and (c)	Plates, sheets, circles, strips and foils in any form or size.	Nil	If produced in ordnance factories belonging to the Central Government and intended for consumption by the ordnance factories or for supply to the Central Government Departments.
2	(a)	Aluminium in any crude form (including ingots, bars, blocks, slabs, billets, shots and pellets), and castings.	Nil	<p>If manufactured from any of the following materials or a combination thereof, namely :</p> <p>(1) old aluminium scrap ; or</p> <p>(2) (a) scrap obtained from virgin metal; or</p> <p>(b) virgin aluminium in any crude form ; or</p> <p>(c) a combination of materials mentioned at (a) and (b) above</p>

1	2	3	4	5
				on which the prescribed amount of duty of excise or the additional duty leviable under section 2A of the Indian Tariff Act, 1934 (32 of 1934), as the case may be, has already been paid.
3 (a)	Aluminium recovered from dross or skimmings of aluminium.	Nil		
4 (b)	Circles having thickness of and above 0.56 millimetres but not above 1.22 millimetres.	Nil	(1)	<p>If in the manufacture of circles, aluminium in any crude form made from any of the following materials, or combination thereof, are used namely :</p> <p>(a) old aluminium scrap ; or</p> <p>(b) (i) scrap obtained from virgin metal; or</p> <p>(ii) virgin aluminium in any crude form; or</p> <p>(iii) a combination of materials mentioned at (i) and (ii) above.</p>

1	2	3	4	5
	A—Contd.			<p>On which the prescribed amount of duty of excise or the additional duty leviable under section 2A of the Indian Tariff Act 1934 (32 of 1934), as the case may be, has already been paid.</p> <p>(2) The Aluminium circles are manufactured by producers who do not produce virgin aluminium from bauxite or from alumina or from both, whether in the same factory or in another factory in India.</p>
5	(b) (c) (d) (e) and (f)	Aluminium articles	Appropriate amount of duty chargeable less Rs. 850.00 per metric tonne	<p>(1) If in the manufacture of aluminium articles, aluminium in any crude form made from any of the following materials or combination thereof are used viz.</p> <p>(a) old aluminium scrap ; or</p> <p>(b) (i) scrap obtained from virgin metal; or</p>

1	2	3	4	5
				<p>(ii) virgin aluminium in any crude form; or</p> <p>(iii) a combination of materials mentioned at (i) and (ii) above.</p> <p>On which the prescribed amount of duty of excise or the additional duty leviable under section 2A of the Indian Tariff Act, 1934 (32 of 1934), as the case maybe, has already been paid.</p> <p>(2) The aluminium articles are manufactured by producers who do not produce virgin aluminium from bauxite or from alumina or from both, whether in the same factory or in another factory in India.</p>
6 (b)	Aluminium sheets	6 per cent <i>ad valorem</i>	If used in the electrolysis process.	
8 (b)	Circles having thickness of and above 0.56 millimetres but not above 1.22 millimetres.	17½ per cent <i>ad valorem</i>		

1	2	3	4	5
9 (b)	Circles having thickness of and above 0.56 millimetres but not above 1.22 millimetres.	Nil	If, in the manufacture of circles, plates, sheets or strips on which the prescribed amount of duty of excise or the additional duty leviable under section 2A of the Indian Tariff Act, 1934 (32 of 1934) as the case may be, has already been paid, are used.	

NOTE (3)—MINISTRY OF FINANCE (Dept. of Revenue & Insurance) CENTRAL EXCISES NOTIFICATION No. 53-A/71 DATED 24TH MAY, 1971 : In exercise of the powers conferred by sub-rule (1) of rule 8 of the Central Excise Rules, 1944 the Central Government hereby exempts Aluminium falling under sub-items (a) and (b) of Item No. 27 of the First Schedule to the Central Excises and Salt Act, 1944 (1 of 1944), from so much of the duty leviable thereon as is equivalent to the duty calculated on a value of one thousand two hundred and fifty-seven rupees per tonne, subject to the conditions that :

- (i) such aluminium is manufactured by its manufacturer from bauxite or from alumina or from both; and
- (ii) total clearances of all aluminium, falling under Item No. 27 of the said First Schedule, by the said manufacturer or by any person on behalf of the said manufacturer, from one or more factories during the financial year preceding the financial year in which assessment is made did not exceed 13,500 tonnes.

## APPENDIX—II

(Vide Paragraph 2.1)

*List of firms, bodies and Government Departments to whom the Commission's questionnaires/letters were issued and from whom replies/memoranda were received*

\*Indicates those who replied.

### A. Producers

\*1. M/s. Indian Aluminium Co. Ltd., 1, Middleton Street, Calcutta-16.

\*2. M/s. Aluminium Corporation of India Ltd., 7, Council House Street, Calcutta-1.

\*3. M/s. Hindustan Aluminium Corporation Ltd., P.O. Renukoot, Dt. Mirzapur, U. P.

\*4. M/s. Madras Aluminium Co. Ltd., "Jayalakshmi", Race Course, Coimbatore-18.

\*5. M/s. India Foils Ltd., G.P.O. Box No. 2381, 4, Mangoe Lane, Calcutta-1.

6. M/s. Metal Rolling Work Pvt. Ltd., 104, Sion Matunga Estate, Sion, Bombay-22.

7. M/s. N. M. Metal Industries, 20, Dadyseth Agiary Lane, Bombay-2.

\*8. M/s. Sri Mahesh Metal Works, Madanganj, Kishangarh, (Rajasthan).

9. M/s. Agarwal Metal Works Pvt. Ltd. Agarwal Road, Rewari (Haryana).

10. M/s. Hooseini Metal Rolling Mill Pvt. Ltd., 66/68, Narayan Dhuru Street, Bombay-3.

\*11. M/s. Rashtriya Metal Industries Ltd., Andheri-Kurla Road, P. O. J. B. Nagar, Bombay-59.

\*12. M/s. Mysore Premier Metal Factory, 127, Mint Street, P. O. Box No. 1674, Madras-1.

\*13. M/s. Popular Metal Works & Rolling Mills, Sion, Bombay-22.

\*14. M/s. Kamani Metal & Alloys Ltd., Lal Bahadur Shastri Marg, Kurla, Bombay-70.

\*15. M/s. Bralco Metal Industries Pvt. Ltd., (Successor to Devidayal Metal Industries), Gupta Mills Estate, Darukhana, Reay Road, Post Box No. 6215, Bombay-10.

16. M/s. Naran Lala Metal Works (P) Ltd., Navasari (Gujarat).

\*17. M/s. Parkash Metal Industries, Jagadhri, (Haryana).

18. M/s. J.B. Metal Industries, Saki Naka, Vihar Lake Road, Kurla, Bombay-72.

#### **B. Prospective Producers**

\*M/s. Bharat Aluminium Co. Ltd., F-41 N.D.S.E. Part-I, Ring Road, New Delhi-49.

#### **C. Producers' Associations**

1. The All India Manufacturers' Organisation, Co-operative Ins. Building, Sir Pherozeshah Mehta Road, Bombay-1.

2. The Federation of Associations of Small Industries of India, Fort Chambers, 67-71 Tamarind Lane, Bombay-1.

3. The Indian Non-Ferrous Metals Manufacturers' Association India Exchange Place, Calcutta-1.

#### **D. Consumers**

\*1. M/s. Aluminium Hindustan Pvt. Ltd., 4, Mangoe Lane, (7th Floor), Calcutta-1.

\*2. M/s. Alcan Asia Ltd., 41, Chowringhee Road, Calcutta-16.

\*3. M/s. Jeewanlal (1929) Ltd., Crown Aluminium House 23, Brabourne Road, Calcutta-1.

4. M/s. Lallubhai Amichand Ltd., 225/7, J. Dadajee Road, Bombay-7.

\*5. M/s. Aluminium Industries Ltd., 1, Ceramic Factory Road, Kundara (Kerala).

6. M/s. Hindustan Aircraft Ltd., Hindustan Aircraft, P.O. Bangalore.

7. M/s. Controller of Stores, North Eastern Railway, Gorakhpur.

8. M/s. General Manager, Southern Railway, Headquarters Office, (Stores Branch), Aynavaram (Perambur), Madras-23.

9. M/s. Controller of Stores, Western Railway, Churchgate, Bombay-20.

\*10. M/s. Larsen & Toubro Ltd., Powai Works, Saki-Vihar Road, P. O. Box No. 8901, Bombay-72.

\*11. M/s. Godfrey Phillips India Ltd., Chakala, Andheri, Bombay-58.

\*12. M/s. Golden Tobacco Co. Ltd., Tobacco House, Vile Parle, Bombay-56.

\*13. M/s. India Tobacco Co. Ltd., Virginia House, 37, Chowringhee Road, Calcutta-16.

\*14. M/s. Lipton (India) Ltd., 9, Western Street, Calcutta-13.

15. M/s. Metal Box Co. of India Ltd., Barlow House, 59-C Chowringhee, Calcutta-20.

\*16. M/s. Zenith Tin Works Pvt. Ltd., Clerk Road, Mahalaxmi, Bombay-34.

\*17. M/s. India Pistons (Pvt.) Ltd., Huzur Gardens, Sembiam, Madras-11.

\*18. M/s. Indian Smelting and Refining Co. Ltd., La) Bahadur Shastri Marg, Bhandup, Bombay-28.

19. M/s. Light Metal Works, New Sun Mill Compound, Delisle Road, Bombay-13.

\*20. M/s. Hindustan Brown Boveri Ltd., Brown Boveri House, 264-65, Dr. Annie Besant Road, Bombay-25.

\*21. M/s. Aluminium Cables & Conductors (U.P.) Pvt. Ltd., 2A, Shakespeare Sarani, Calcutta-16.

\*22. M/s. Anam Electrical Manufacturing Co., Kadiyan, Dt. East Godavari (A.P.).

23. M/s. Bombay Conductors & Electricals Pvt. Ltd., Post Bag No. 2, Maninagar, Ahmedabad-8.

\*24. M/s. Electrical Manufacturing Co. Ltd., 136, Jessore Road, Calcutta-55.

\*25. M/s. India Aluminium Cables Ltd., 21-A Himalaya House, Kasturba Gandhi Marg, New Delhi. 1.

\*26. M/s. Indian Cable Co. Ltd., 9, Hare Street, Calcutta-1.

\*27. M/s. Jaipur Metals & Electricals Ltd., Jaipur-6 (Rajasthan).

\*28. M/s. National Insulated Cable Co. of India Ltd., 'Niccó House', Hare Street, Calcutta-1.

29. M/s. National Screw & Wire Products Ltd., "Stephen House" 4, Dalhousie Square East, Calcutta-1.



\*30. M/s. Power Cables Pvt. Ltd., 24, Brelvi Sayed Abdulla Road, P.B. No. 1522, Bombay.

31. M/s. Sahibganj Electric Cables (P) Ltd., 15A, Palace Court, 1, Kyd Street, Calcutta-16.

\*32. M/s. Assam Conductors & Tubes Ltd., P. O. Bamunimaidan, Gauhati-21 (Assam).

\*33. M/s. Carter Wallace Ltd., Ruadeourem, Panjim (Goa).

\*34. M/s. Devidayal Cable Industries Ltd., Gupta Mills Estate, Darukhana, Reay Road, Bombay-10.

\*35. M/s. Jayant Metal Manufacturing Co., P.O. Box No. 7009, 16, Sayani Road, Bombay-25.

\*36. M/s. Emmes Metals Pvt. Ltd., P. B. No. 7660, 147, Govt. Industrial Estate, Kandivili West, Bombay-67.

\*37. M/s. Amcital Harjivandas & Co., 156-D, Dr. Mascarenhas Road, Shroff Wadi, Mazagaon, Bombay-10.

#### *E. Consumer's Associations*

1. The All-India Non-Ferrous Metal Industries Association, Liberty Building, Marine Lines, Bombay-20.

\*2. The Federation of Electricity Undertakings of India, Transport House, BEST Undertaking, Bhagatsingh Road, Bombay-1.

\*3. The Indian Electrical Manufacturers' Association, (Western Region), 35, Himgiri, Peddar Road, Bombay-26.

4. The Indian Drug Manufacturers' Association, Sujat, Mansion, Andheri West, Bombay-58.

\*5. The Organisation of Pharmaceutical Producers of India, Cook's Building, Dr. Dadabhoy Naoroji Road, Bombay-1.

6. The Indian Chemical Manufacturers' Association, 'India Exchange,' India Exchange Place, Calcutta-1.

7. The Indian Electrical Manufacturers' Association, India Exchange, 7th Floor, Calcutta.

\*8. The Indian Pharmaceutical Association, 60/1, Chowringhee Road, Calcutta-20.

9. The Plywood & Tea-Chest Manufacturers' Association of India, P-11, Mission Row Extension, Calcutta-1.

\*10. The Fair Trade Practices Association, C/o. Indian Merchants' Chamber, 76, Veer Nariman Road, Churchgate, Bombay-20.

\*11. The Consumer Guidance Society, Maneckji Wadia Building, 127, M. G. Road, Bombay-1.

### **F. Raw Material Suppliers**

\*1. M/s. The Phosphate Co. Ltd., 14, Netaji Subhash Road, Calcutta.

\*2. M/s. The Fertilizers & Chemicals Travancore Ltd., Udyogmandal, P. O. Alwaye (Kerala).

3. M/s. Jayshree Fertilizers & Chemicals, India Exchange, Calcutta-1.

4. M/s. Premier Fertilizers Ltd, 150-1, Mount Road, Madras-2.

\*5. M/s. Adarsh Chemicals & Fertilizers Ltd., P.O. Udhna, Dist. Surat (Gujarat).

\*6. M/s. Navin Fluorine Industries, Chemical Division, Mafatlal Fine Spg. & Mfg. Co. Ltd., Mafatlal House, Backbay Reclamation P.O. Box No. 10037, Bombay-20.

\*7. M/s. India Carbon Ltd., Temple Chambers, 6, Old Post Office Street, Calcutta-1.

8. M/s. Graphite India Ltd., 14, Netaji Subhash Road, Calcutta-1.

9. M/s. Hindustan Steel Ltd., P.O. Hinoo, Ranchi-2. (Bihar).

### **G. (a) Government Departments**

\*1. The Director General of Technical Development, (Non-Ferrous Industries Directorate), Udyog Bhavan, Maulana Azad Road, New Delhi.

\*2. The Secretary to the Govt. of India, Ministry of Steel and Mines Department of Mines, Shastri Bhavan, New Delhi.

\*3. Development Commissioner, Small Scale Industries, Nirman Bhavan, Maulana Azad Road, New Delhi-11.

4. Commissioner General of Civil Supplies, Ministry of Industrial Development & Internal Trade, 309, B Wing Shastri Bhavan, New Delhi.

\*5 The Controller, Indian Bureau of Mines, Nagpur.

\*6. Director General, Geological Survey of India, 27, Chowringhee Road, Calcutta-13.

\*7. Chief Controller of Import & Exports, Ministry of Foreign Trade, New Delhi.

\*8. The Collector of Central Excise, P. B. No. 11078, Bombay-20.

\*9. The Collector of Customs, New Custom House, Ballard Estate-Bombay-1.

10. The Director, Central Water and Power Commission, Bikaner House, Shahjahan Road, New Delhi-11.

\*11. Indian Standard Institution, Manak Bhavan, 9, Bahadur Shah Zafar Marg, New Delhi-1.

\*12. Minerals & Metals Trading Corp'n. of India Ltd., P. O. Box 493, Express Building, Bahadur Shah Zaffer Marg, New Delhi-1.

#### *G.(b) Trade Representatives*

\*1. First Secretary (Commercial), Embassy of India, 8, Boulevard De La Madeleine, Paris-9e (France).

\*2. Attache (Commercial), Embassy of India, Tokyo (Japan).

\*3. Attache (Commercial), Embassy of India, 2107-Massachusette Avenue, N. W. Washington, D.C. 20008. (U.S.A.).

\*4. First Secretary (Commercial), High Commission of India, 200, MacLaron Street, Ottawa-4. (Canada).

\*5. First Secretary (Commercial), High Commission of India, India House, Aldwych, London W.C.-2. (U.K.).

6. Counsellor (Commercial), Embassy of India, 262, Adenaturalle, Bonn. (West Germany).

\*7. Commercial Officer, High Commission for Canada, 13, Golf Links Area, New Delhi-3.

8. Trade Commissioner for France in India, The Beacon, 7th Floor Foreshore Road, Backbay Reclamation, Bombay-1.

\*9. Commercial Counsellor to the Embassy of the Federal Republic of Germany, 6/50 G, Shanti Path, Chanakyapuri, New Delhi-11.

10. The First Secretary (Commercial) to the Japanese Embassy in India, Plot No. 4, Block 50G, Chanakyapuri, New Delhi-11.

11. Commercial Officer, British High Commission, Mercantile Bank Building, M. G. Road, Bombay-1.

12. Commercial Attache to the Embassy of the United States of America in India, Shantipath, Chanakyapuri, New Delhi-11.

#### *G.(c) State Governments*

1. The Chief Secretary, Government of Andhra Pradesh, Hyderabad.

2. The Chief Secretary, Government of Assam, Shillong.

3. The Chief Secretary, Government of Bihar, Patna.

4. The Chief Secretary, Government of West Bengal, Calcutta.

- \*5. The Chief Secretary, Government of Gujarat, Ahmedabad.
- 6. The Chief Secretary, Government of Jammu & Kashmir, Srinagar.
- 7. The Chief Secretary, Government of Kerala, Trivandrum.
- 8. The Chief Secretary, Government of Madhya Pradesh, Bhopal.
- \*9. The Chief Secretary, Government of Tamil Nadu, Madras.
- \*10. The Secretary to the Government of Maharashtra, Industries and Labour Department, Sachivalaya, Bombay-32.
- 11. The Chief Secretary, Government of Mysore, Bangalore.
- 12. The Chief Secretary, Government of Orissa, Bhubaneswar.
- 13. The Chief Secretary, Government of Punjab, Chandigarh.
- 14. The Chief Secretary, Government of Rajasthan, Jaipur.
- \*15. The Chief Secretary, Government of Uttar Pradesh, Lucknow.
- 16. The Chief Secretary, Delhi Administration, Delhi.
- 17. The Chief Secretary, Government of Himachal Pradesh, Simla.

*G.(d) Directors of Industries*

- 1. The Director of Industries, Government of Andhra Pradesh Hyderabad.
- 2. The Director of Industries, Government of Assam, Shillong.
- 3. The Director of Industries, Government of Bihar, Patna.
- \*4. The Director of Industries, Government of West Bengal, Calcutta.
- \*5. The Director of Industries, Government of Gujarat, Ahmedabad.
- 6. The Director of Industries, Government of Jammu & Kashmir, Srinagar.
- 7. The Director of Industries, Government of Kerala, Trivandrum.
- \*8. The Director of Industries, Government of Madhya Pradesh, Bhopal.
- 9. The Director of Industries, Government of Tamil Nadu, Madras.
- \*10. The Director of Industries, Government of Mysore, Bangalore.
- 11. The Director of Industries, Government of Orissa, Bhubaneswar.

- \*12. The Director of Industries, Government of Punjab, Chandigarh.
- \*13. The Director of Industries, Government of Rajasthan, Jaipur.
- 14. The Director of Industries, Government of Uttar Pradesh, Kanpur.
- \*15. The Director of Industries, Delhi Administration, Delhi.
- 16. The Director of Industries, Government of Himachal Pradesh, Simla.

#### **G.(e) Electricity Suppliers**

- \*1. The Chief Engineer, Andhra Pradesh State Electricity Board, Hyderabad.
- \*2. The Chief Engineer, Assam State Electricity Board, Shillong.
- 3. The Chief Engineer, Bihar State Electricity Board, Patna.
- \*4. The Chief Engineer, West Bengal State Electricity Board, Calcutta.
- \*5. The Chief Engineer, Gujarat State Electricity Board, Ahmedabad.
- 6. The Chief Engineer, Jammu & Kashmir State Electricity Board, Srinagar.
- 7. The Chief Engineer, Kerala State Electricity Board, Trivandrum.
- 8. The Chief Engineer, Madhya Pradesh State Electricity Board, Bhopal.
- 9. The Chief Engineer, Tamil Nadu State Electricity Board, Madras.
- \*10. The Chief Engineer, Maharashtra State Electricity Board, Bombay.
- 11. The Chief Engineer, Mysore State Electricity Board, Bangalore.
- 12. The Chief Engineer, Orissa State Electricity Board, Bhubaneswar.
- 13. The Chief Engineer, Punjab State Electricity Board, Chandigarh.
- \*14. The Chief Engineer, Rajasthan State Electricity Board, Jaipur.
- 15. The Chief Engineer, Uttar Pradesh State Electricity Board, Lucknow.
- 16. The Chief Engineer, Delhi Administration Electricity Board, Delhi.
- \*17. The Chief Engineer, Himachal Pradesh State Electricity Board, Simla.
- 18. Tata Hydro Electric Power Supply Co. Ltd., Tata Vidyut Bhavan, Murzban Road, Bombay-1.
- \*19. Commercial Engineer, Damodar Valley Corporation, Bhabani Bhavan, P. O. Alipore, Calcutta-27.

**APPENDIX—III**  
(Vide Paragraph 2.2)

*List of Persons who participated in the Joint discussions on 25th August, 1971.*

Name	Representing
1. Mr. J. B. Leslie . . . . .	} Indian Aluminium Co. Ltd. Middleton Street, Calcutta-16.
2. Mr. A. H. J. Muirhead . . . . .	
3. Dr. N. S. Thacker . . . . .	
4. Shri K. Gopalkrishnan . . . . .	
5. Shri S. S. Kothari . . . . .	} Hindustan Aluminium Corpn. Ltd., P.O. Renukoot, Distt. Mirzapur, U.P.
6. Shri A. K. Agarwala . . . . .	
7. Shri S. H. Kejriwal . . . . .	
8. Shri M. C. Dube . . . . .	
9. Shri K. K. Bhasin . . . . .	} Aluminium Corporation of India Ltd., 7, Council House Street, Calcutta-1.
10. Shri K. G. Rath . . . . .	
11. Shri N. N. Kapadia . . . . .	} Madras Aluminium Co. Ltd., "Jayalakshmi", Race Course, Coimbatore.
12. Shri A. Ramachandran . . . . .	
13. Shri K. Jayaraman . . . . .	
14. Shri M. D. Ramanathan . . . . .	

APPENDIX—IV  
(Vide paragraph 4.3.2)  
*Utilisation of Capacity of primary metal*

Name of unit	Installed Capacity*		Production of primary metal				Utilisation Percent			
	1-1-1969	1-1-1970	1-1-1971	1968	1969	1970	1968	1969	1970	(Tonnes)
1	2	3	4	5	6	7	8	9	10	
(1) Indian Aluminium Co. Ltd.										
(a) Hirakud	20,000	20,000	20,000	20,879	22,576	16,198	104.4	112.9	81.0	
(b) Alwaye	16,000	16,000	16,000	17,865	17,856	18,256	111.7	111.6	114.1	
(c) Belgaum	Nil	20,000	30,000	Nil	1,128	27,209	..	5.6	90.7	
TOTAL	36,000	56,000	66,000	38,744	41,560	61,663	107.6	74.2	93.4	
(2) Hindustan Aluminium Corporation	60,000	80,000	80,000	59,708	72,233	78,191	99.5	90.3	97.7	
(3) Madras Aluminium Co. Ltd.	14,000**	14,000**	14,000**	13,043	13,238	13,154	93.2	94.6	94.0	
(4) Aluminium Corporation of India Ltd.	9,000	9,000	9,000	8,641	5,525	8,073	96.0	61.7	89.7	
GRAND TOTAL	1,19,000	1,59,000	1,69,000	1,20,136	1,32,556	1,61,081	101.0	83.4	95.3	

\*Source : D. G. T. D.

\*\*Figures adopted by the Commission.

# APPENDIX V

(Vide Paragraph 4.4.11)

## Future Estimates of Installed Capacity and Production of Aluminium Metal

(In '000 Tonnes)

Name of the Unit	Installed Capacity					Production				
	1972	1973	1974	1975	1976	1972	1973	1974	1975	1976
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Hindustan Aluminium Corporation Ltd.	80	100	120	120	120	90	100	120	120	120
2. Madras Aluminium Co., Ltd.	18	25	25	25	25	18	25	29	29	29
3. Indian Aluminium Co. Ltd.	76	76	100	120	120	89	90	91	113	113
4. Aluminium Corporation of India Ltd. (Financial Year figures).	9	9	24	24	24	8	8	23	23	23
<b>TOTAL</b>	<b>183</b>	<b>210</b>	<b>269</b>	<b>289</b>	<b>289</b>	<b>205</b>	<b>223</b>	<b>263</b>	<b>285</b>	<b>285</b>

NOTE.—Bharat Aluminium Co. has been excluded.



APPENDIX VI  
(Vide Paragraph 4.4.12)  
*World Production of Aluminium*

Country	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
<i>World Total</i>	4,950	5,185	5,580	5,862	6,553	6,951	7,583	8,343	8,876	10,019
<i>North America : Total</i>	2,777	2,567	2,808	3,038	3,415	3,606	3,881	4,268	4,265	4,927
Canada .	762	663	690	719	843	831	890	975	985	1,098
United States .	2,014	1,904	2,118	2,313	2,553	2,754	2,968	3,269	3,255	3,793
Mexico .	..	..	..	6	19	21	22	24	25	36
<i>South America : Total</i>	20	22	22	19	29	35	58	79	105	121
Brazil .	20	22	22	19	29	34	30	42	46	48
Surinam .	..	..	..	..	..	1	28	34	48	59
Venezuela .	..	..	..	..	..	..	..	3	11	15
<i>Asia : Total</i>	264	310	350	431	487	529	593	632	786	935
China .	88	110	110	110	110	110	110	88	99	132
India .	20	20	39	61	62	74	92	106	132	145
Japan .	147	169	189	247	293	324	372	421	532	627
South Korea .	..	..	..	..	..	..	..	..	..	7
Taiwan .	9	10	12	13	21	21	19	17	22	24

(Thousands of short tons)

<i>Africa : Total</i>	•	•	48	52	58	58	57	56	54	97	170	176
Cameroon	•	•	48	52	58	58	57	56	54	53	50	52
Ghana	•	•	•	•	•	•	•	•	•	44	120	125
<i>Oceania-Australia</i>	•	•	13	15	18	46	88	97	101	102	107	139
<i>Europe : Total</i>	•	•	1,827	2,220	2,325	2,269	2,477	2,629	2,897	3,164	3,444	3,720
<i>Common Market—</i>												
<i>Countries : Total</i>	•	•	541	590	613	660	718	770	833	853	892	937
France	•	•	263	308	325	329	348	375	401	398	403	409
Germany West	•	•	186	190	196	230	242	258	269	279	278	290
Italy	•	•	92	92	91	101	127	137	141	141	157	159
Netherlands	•	•	•	•	•	•	•	•	22	35	54	79
<i>European Free Trade</i>												
<i>Association : Total</i>	•	•	350	364	419	452	513	540	592	645	799	865
Austria	•	•	75	75	82	84	86	87	87	87	95	106
Norway	•	•	182	189	227	248	288	304	357	398	516	564
Sweden	•	•	18	17	18	19	34	35	32	38	62	74
Switzerland	•	•	44	47	55	66	71	74	76	80	85	85
United Kingdom	•	•	32	36	38	34	36	40	41	43	42	37
<i>Other : Total</i>	•	•	936	1,266	1,293	1,157	1,245	1,319	1,472	1,666	1,753	1,918

## APPENDIX VI--(Contd.)

Country	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Czechoslovakia . . .	44	55	65	65	65	68	68	72	72	72
Germany East . . .	44	50	50	50	72	77	88	88	88	88
Greece . . .	..	..	..	..	..	..	40	79	84	88
Hungary . . .	55	56	58	61	63	64	67	68	69	71
Iceland . . .	..	..	..	..	..	..	..	..	..	14
Poland (includes Secondary).	29	52	53	51	53	52	61	102	103	107
Rumania (includes Secondary).	..	..	..	..	..	25	52	58	84	99
Spain . . .	32	42	46	50	55	57	70	86	98	114
U.S.S.R. . .	705	980	990	840	900	930	980	1,064	1,102	1,213
Yugoslavia . . .	28	30	31	40	38	46	46	49	53	53

Source : U.S. Department of the Interior, Bureau of Mines.

**APPENDIX VII**  
(Vide Paragraph 4.5.2)

*Break-up of the estimates of demand during 1971, 1972, 1973, 1974 ;  
1975.*

(Thousand tonnes)

	INDAL- CO	HIN- DALCO	ALCOP*	MAL- CO	Mini- stry & D.G.T D.*
1971					
(i) Electrical . . .	100	108	115	170	233
(ii) Transport . . .	15	20	18	12	
(iii) Domestic App- liances.	38	36	37	25	
(iv) Canning & Packaging	14	16	19	4	
(v) Building and Cons- truction.	7	10	8	2	
(vi) Miscellaneous . .	20	10	29	13	36
(vii) Exports . . .	10	..	28	15	
<b>TOTAL . . .</b>	<b>204</b>	<b>200</b>	<b>254</b>	<b>241</b>	<b>269</b>
1972					
(i) Electrical . . .	105	121	125	187	254
(ii) Transport . . .	17	22	20	14	
(iii) Domestic App- liances.	40	40	42	29	
(iv) Canning and Packa- ging.	16	18	21	5	
(v) Building and Cons- truction.	8	11	10	3	
(vi) Miscellaneous . .	24	12	34	20	40
(vii) Exports . . .	10	..	28	17	
<b>TOTAL . . .</b>	<b>220</b>	<b>224</b>	<b>280</b>	<b>275</b>	<b>294</b>

	IN- DALCO	HIN- DAL- CO	ALCOP*	MAL- CO	Ministry & D.G. T.D.*
1973					
(i) Electrical . . .	110	131	135	206	140
(ii) Transport . . .	19	28	22	16	22
(iii) Domestic Appliances. Ap-	43	45	46	33	38
(iv) Canning and Pack-aging.	19	20	23	6	22
(v) Building and Construction.	10	15	11	4	10
(vi) Miscellaneous . .	29	12	38	23	42
(vii) Exports . . .	15	..	50	20	50
TOTAL .	245	251	325	308	324
1974					
(i) Electrical . . .	125	140	148	227	} 301
(ii) Transport . . .	22	34	24	18	
(iii) Domestic Appliances. Appli-	46	48	51	38	
(iv) Canning and Pack-aging.	22	22	25	7	
(v) Building and Construction.	12	20	12	5	
(vi) Miscellaneous . .	35	16	45	26	
(vii) Exports . . .	20	12	60	23	64
TOTAL .	282	292	365	344	365

INDAL- HIN- ALCOP\* MAL- Ministry  
CO DALCO CO &  
D.G.T.  
D.@\*

1975					
(i) Electrical	135	154	164	260	} 332
(ii) Transport	25	42	28	22	
(iii) Domestic Appliances.	49	54	55	44	
(iv) Canning and Packaging.	25	26	28	8	
(v) Building and Construction.	14	26	15	6	
(vi) Miscellaneous	40	18	50	30	
(vii) Exports	25	26	70	26	70
<b>TOTAL</b>	<b>313</b>	<b>346</b>	<b>410</b>	<b>386</b>	<b>402</b>

REMARKS.—\* Financial year figures 1971-72 onwards.

@Based on Planning Sub-Group for Aluminium and Magnesium's Report (1968) and Inter-Ministerial Meeting held on 27-12-1969.

*Basis of calculations :—*

- (i) INDALCO . . . No basis have been furnished.
- (ii) HINDALCO . . . The domestic consumption in 1970 was 400% of the figure achieved in 1960. This means that consumption has grown at a compound rate of 15% per year during the 10-year period between 1960 and 1970. We anticipate a more modest rate of growth of about 12% per year between 1970 and 1974. After 1974, the massive economic momentum generated by the Fourth Five Year Plan and the increased penetration by aluminium into almost all end-use industries (especially transport and building and construction) should raise the aluminium consumption growth rate to around 13% per year. With the expansion of the indigenous aluminium

industry, there is every reason to expect that the country could become an increasingly important net exporter of aluminium in the years ahead. However net exports would depend on the balance between demand and supply in the home markets. As to the likely changes in the consumption pattern, the market share of the Electrical Industry is expected to be slightly lower at 54% during 1971 and 1972 and then fall steadily to 48% in 1975. Domestic Appliances would continue to represent 18% of the total market upto 1973 and then fall slightly to 17% in 1974 and 1975. The Transport Industry is expected to take an increasingly bigger share of the market, going up steadily from 9% in 1970 to 13% in 1975. Canning and Packaging would continue to account for about 8% of the domestic aluminium demand, Building and construction would maintain its 5% share upto 1972 and then forge ahead at a steady pace to reach 8% in 1975. With increasingly greater diversification of the industry, Miscellaneous Uses should go up from 5% in 1971 to about 6% in 1975.

(iii) ALCOP

Current consumption pattern, expanded capacities envisaged and estimated 10 to 12 percent increase in demand in various sectors every year.

(iv) MALCO

1. The estimated demand for electrical sector for 1971 based on figures accepted at a meeting convened by the Department of Mines and Metals on the basis of electrification programmes. Demand for subsequent years worked out at 10% compound annual growth rate.
2. The estimated demand for other sectors of 1971 are based on the availability of about 76,000 tonnes of commercial grade aluminums. Demands for subsequent years worked at 15% compound annual growth rate.

## APPENDIX VIII

(Vide Paragraph 4.7.3.2)

A. Statement showing Capacity, Production/Consumption of Alumina from 1967 to 1970 ('000 Tonnes)

Name of Unit	Capacity			1968		1969		1970	
	1967	1968	1969	1970	Pro-duction sump- tion	Pro-duction sump- tion	Pro-duction sump- tion	Pro-duction sump- tion	Pro-duction sump- tion
(a) HINDALCO*	120.0	135.0	150.0	155.0	130.3	118.0	153.3	142.3	168.8
(b) INDALCO@	70.0	72.0	72.0	72.0	73.3	75.8	72.4	81.2	99.0
(c) MALCO**	25.0	30.0	32.0	35.0	28.5	26.2	30.0	23.7	31.0
(d) ALCOPI***	15.0	18.0	18.0	18.0	17.5	17.4	11.2	10.8	14.9
<b>Total</b>	<b>230.0</b>	<b>255.0</b>	<b>272.0</b>	<b>280.0</b>	<b>249.6</b>	<b>237.4</b>	<b>266.9</b>	<b>258.0</b>	<b>313.7</b>

## REMARKS

\*Sales : 1968 = 3,743 Tonnes  
 1969 = 5,690 " "  
 1970 = 10,539 " "

@Imports  
 1968 = 3,989 Tonnes  
 1969 = 14,327 " "  
 1970 = 3,419 " "

## @Local Purchases

1968 = 7,302 Tonnes  
 1969 = 7,784 " "  
 1970 = 7,784 " "

@Belgaum Alu-  
 mina plant was  
 commissioned  
 in mid-1970.

\*\*\*Financial year figures.



**B. Estimates of future Capacity, Production and Consumption of Alumina**

('000 Tonnes)

Name of Unit	1971	1972	1973	1974	1975
<b>(a) HINDALCO—</b>					
(i) Capacity . . .	155	170	250	250	250
(ii) Production . . .	160	170	170	250	250
(iii) Consumption . . .	156	180	200	240	240
<b>(b) INDALCO—</b>					
(i) Capacity . . .	130	160	150	150	200
(ii) Production . . .	150	175	185	185	225
(iii) Consumption . . .	155	173	176	178	220
<b>(c) MALCO—</b>					
(i) Capacity . . .	35	42	65	65	65
(ii) Production . . .	32	40	55	60	64
(iii) Consumption . . .	28	36	50	58	58
<b>(d) ALCOP*—</b>					
(i) Capacity . . .	18	18	18	48	48
(ii) Production . . .	16	16	16	46	46
(iii) Consumption . . .	16	16	16	46	46
<b>Total—</b>					
(i) Capacity . . .	338	380	483	513	563
(ii) Production . . .	358	401	426	541	585
(iii) Consumption . . .	355	405	442	522	564

\*Financial year figures.

**AP PENDIX IX**  
(Vide Paragraph 6.2)

*Standard specifications formulated by I.S.I. since 1968*

- (i) IS : 3965-1969 . Dimensions for wrought aluminium and aluminium alloy, bar, rod and section.
- (ii) IS : 5082-1969 . Wrought aluminium and aluminium alloy bars, rods, tubes and sections for electrical purposes.
- (iii) IS : 5484-1969 . EC Grade aluminium rod produced by continuous casting and rolling.
- (iv) IS : 5909:1970 . Aluminium and aluminium manganese alloy sheet and strip for aircraft purposes.
- (v) IS : 1285-1968 . Wrought aluminium and aluminium alloys, extruded round tube and hollow sections (for general engineering purposes) (*First revision*).
- (vi) IS : 2678-1963 . Dimensions for wrought aluminium and aluminium alloys, drawn tube (*Draft revision in wide circulation*).
- (vii) Draft Indian standard dimensions for wrought aluminium and aluminium alloys extruded hollow sections.
- (viii) Draft Indian standard aluminium and aluminium alloys longitudinally welded tube (for general engineering purposes).
- (ix) Draft Indian standard aluminium alloy tube for irrigation purposes.
- (x) Draft Indian standard aluminium alloy ingots for bearings.
- (xi) IS : 5902-1970 . Aluminium and aluminium alloy rivet stock for cold forged rivets for aircraft purposes.

**APPENDIX X**  
(Vide Paragraph 10.9).

*Financial analysis of the four primary aluminium metal manufacturers,  
from their published accounts for the last three years*

(a) M/S INDIAN ALUMINIUM COMPANY LTD.

(Rs. Lakhs)

	Year ending 31st December					
	1968		1969		1970	
	Rs.	%	Rs.	%	Rs.	%
1	2	3	4	5	6	7
<b>A. Capital Funds Available :</b>						
(i) Equity shares	1195.32	40.22	1200.88	32.86	1201.18	25.84
(ii) Preference shares	40.00	1.34	40.00	1.09	40.00	0.86
(iii) Reserves & Surplus	1291.15	..	1551.22	..	1911.14	..
Less Investments	40.52	..	49.24	..	67.64	..
Reserves used in this activity.	1250.63	42.08	1501.98	41.10	1843.50	39.65
(iv) Loans	1534.02	..	2188.64	..	2303.13	..
Less Capital work-in-progress	1047.94	..	1277.00	..	738.77	..
	586.08	16.36	911.64	24.95	1564.36	33.65
<b>TOTAL (i to iv)</b>	<b>2972.03</b>	<b>100</b>	<b>3654.50</b>	<b>100</b>	<b>4649.04</b>	<b>100</b>
<b>B. Capital Funds Utilised for :</b>						
(i) Net Fixed Assets (excluding capital work-in-progress).	1468.38	49.41	2316.24	63.38	3457.49	74.37
(ii) Working Capital	1503.65	50.59	1338.26	36.62	1191.55	25.63
<b>TOTAL (i + ii)</b>	<b>2972.03</b>	<b>100</b>	<b>3654.50</b>	<b>100</b>	<b>4649.04</b>	<b>100</b>
<b>C. Average Capital Employed.</b>	..	..	3313.27	..	4151.77	..
<b>D. Sales Realisation</b>	..	..	2642.77	..	3539.90	..
<b>E. Cost of sales</b>	..	..	2003.06	..	2842.24	..
<b>F. Gross Margin (D—E)</b>	..	..	639.71	..	697.66	..
<b>G. Gross Margin (F) as related to—</b>						
(i) Average Capital (C)	..	..	19.31	..	16.80	..
(ii) Sales Realisation (D)	..	..	24.21	..	19.71	..
(iii) Cost of sales (E)	..	..	31.94	..	24.55	..
<b>H. Ratio of Average Capital (C) to Cost of Sales (E).</b>	..	..	1:0.6046	..	1:0.6846	..
<b>I. Dividends (Subject to Tax)</b>	..	%	..	%	..	%
(i) Preference	..	6.25	..	6.25	..	6.25
(ii) Equity	..	14.00	..	14.00	..	14.00

NOTE.—(i) Equity Capital includes Bonus Shares of Rs. 13.51 lakhs.

## (b) M/S ALUMINIUM CORPORATION OF INDIA LTD.

(Rs. Lakhs)

	Year ending 31st March					
	1968		1969		1970	
	Rs.	%	Rs.	%	Rs.	%
1	2	3	4	5	6	7
<b>A. Capital Funds Available :</b>						
(i) Equity Shares .	135.00	17.23	135.00	16.36	135.00	15.21
(ii) Preference shares .	65.00	8.30	65.00	7.88	65.00	7.32
(i i) Reserves .	389.14	..	420.28	..	425.07	..
Less Investments .	0.96	..	0.95	..	0.95	..
Reserves used in business.	388.18	49.56	419.33	50.80	424.12	47.78
(iv) Loans .	200.06	..	208.02	..	264.77	..
Less Capital Work in progress.	4.94	..	2.01	..	1.23	..
	195.12	24.91	206.01	24.96	263.54	29.69
<b>TOTAL (i to iv) .</b>	<b>783.30</b>	<b>100</b>	<b>825.34</b>	<b>100</b>	<b>887.66</b>	<b>100</b>
<b>B. Capital Funds Utilised for :</b>						
(i) Net Fixed Assets .	719.64	91.87	714.30	86.55	724.34	81.60
(ii) Working Capital .	63.66	8.13	111.04	13.45	163.32	18.40
	783.30	100	825.34	100	887.66	100
<b>C. Average Capital .</b>	..	..	804.32	..	856.50	..
<b>D. Sales Realisation (net of Excise Duty, Selling Commission, etc.).</b>	..	..	481.49	..	288.05	..
<b>E. Cost of sales .</b>	..	..	409.86	..	302.31	..
<b>F. Gross Margin (D—E) .</b>	..	..	71.63	(—)	14.26	..
<b>G. Gross Margin as related to</b>						
(i) Average Capital (C) .	..	..	8.92	(—)	1.66	..
(ii) Sales Realisation (D)	..	..	14.88	(—)	4.95	..
(iii) Cost of Sales (E) .	..	..	17.48	(—)	4.72	..
<b>H. Ratio of Capital Employed (C) to Cost of Sales (E).</b>	..	..	1:0.51	..	1:0.35	..
<b>I. Dividends (Subject to Tax).</b>		%		%		%
Preference (a) .		8.8		8.8		8.8
(b) .		6.5		6.5		6.5
(c) .		9.3		9.3		9.3
Equity .		12.0		10.0		Nil

Notes.— (i) Equity shares include bonus shares of Rs. 23.44 lakhs

(ii) The profit shown in the accounts for 1969-70 is before providing depreciation for the year, which worked out to Rs. 49.69 lakhs. This has been adjusted in the cost of sales &amp; gross margin shown above.

## (c) M/S HINDUSTAN ALUMINIUM CORPORATION LTD.

(Rs. lakhs)

	Year ending 31st December					
	1968		1969		1970	
	Amount	%	Amount	%	Amount	%
<b>A. Capital Funds Available</b>						
(i) Equity shares . . .	803.45	18.36	803.45	19.55	803.45	18.89
(ii) Preference Shares . .	399.73	9.14	499.73	12.16	499.73	11.74
(iii) Reserves & Surplus .	1241.95	..	1768.09	..	2617.36	..
Less : Investments . . .	390.13	..	690.13*	..	1184.35*	..
Net Reserves . . .	851.82	19.47	1077.96	26.23	1433.01	33.69
(iv) Loan Capital . . .	2519.79	..	1961.48	..	1741.00	..
Less : Work in Progress .	59.81	..	116.61	..	111.48	..
Misc. Dsf. Exp. . .	23.79	..	30.85	..	15.22	..
Loans to subsidiary Cos. .	115.79	..	86.05	..	96.93	..
	199.39	..	233.51	..	223.63	..
Net Loan Capital . . .	2320.40	53.03	1727.97	42.06	1517.37	35.68
(v) Total Capital Funds available (i to iv).	4375.40	100	4109.11	100	4253.56	100
<b>B. Capital utilised for :</b>						
(i) Net Fixed Assets . . .	3789.45	..	3560.35	..	3413.67	..
(ii) Working Capital . . .	585.95	..	548.76	..	839.89	..
(iii) Total (i + ii) . . .	4375.40	..	4109.11	..	4253.56	..
<b>C. Average Capital Employed.</b>						
	..	..	4242.26	..	4181.63	..
<b>D. Net Sales Turnover (excluding Excise Duty, Commission, etc.).</b>						
	2586.62	..	3396.82	..	3954.14	..
<b>E. Cost of Sales . . .</b>						
	2123.41	..	2665.14	..	3218.81	..
<b>F. Gross Margin (D—E) . . .</b>						
	463.21	..	731.68	..	735.33	..
<b>G. Gross Margin (F) as related to—</b>						
(i) Average Capital Employed (C) . . .	..	..	17.25	..	17.58	..
(ii) Net Sales (D) . . .	17.91	..	21.54	..	18.60	..
(iii) Cost of Sales (E) . . .	21.81	..	27.45	..	22.84	..
<b>H. Ratio of Average Capital Employed (C) to Cost of Sales (F).</b>						
	..	..	1:0.6282	..	1:0.7697	..
<b>I. Dividend paid—</b>						
		%		%		%
Preference shares (a) . . .	..	9.0	..	9.0	..	9.0
(b) . . .	..	9.3	..	9.3	..	9.3
Equity Shares . . .	..	10.0	..	10.0	..	12.5

\* [Includes fixed deposits in banks—1969—Rs. 300.00 lakhs and 1970—Rs. 784.22 lakhs.]

## (d) M/S MADRAS ALUMINIUM COMPANY LTD

(Rs. Lakhs)

	Year ending 31st December					
	1968		1969		1970	
	Amount	%	Amount	%	Amount	%
<b>A. Capital Funds Available</b>						
(i) Equity Shares .	447.96	27.32	448.02	29.14	448.83	30.40
(ii) Preference Shares .	149.81	9.14	149.81	9.74	149.81	10.15
(iii) Reserves & Surplus .	76.76	..	128.37	..	223.10	..
Less Investments outside	10.89	..	9.22	..	9.22	..
Net Reserves . . .	65.87	4.02	119.15	7.75	213.88	14.49
(iv) Loan Capital . .	976.02	59.52	820.74	53.37	663.76	44.96
Total Capital Funds Available (i to iv).	1639.66	100	1537.72	100	1476.28	100
<b>B. Capital utilised for—</b>						
(i) Net Fixed assets .	1261.33	..	1178.18	..	1106.91	..
(ii) Working Capital .	378.53	..	359.54	..	369.37	..
(iii) Total (i+ii) . .	1639.66	..	1537.72	..	1476.28	..
C. Average Capital Employed.	..	..	1588.69	..	1507.00	..
D. Sales (Net) . . .	..	..	641.55	..	720.77	..
E. Cost of Sales . . .	..	..	474.81	..	520.67	..
F. Gross Margin (D—E) .	..	..	166.74	..	200.10	..
G. Gross Margin as % of—	..	..	..	..	..	..
(i) Sales . . . . .	..	..	25.99	..	27.76	..
(ii) Cost of sales . .	..	..	35.12	..	38.43	..
(iii) Average Capital Employed.	..	..	10.50	..	13.28	..
H. Ratio of Capital Employed.	..	..	1:0.2989	..	0:0.3455	..
		%		%		%
<b>I. Dividend paid—</b>						
Preference Shares*	..	9.3	..	9.3	..	9.3
Equity Shares . . .	..	8.0	..	12.0	..	12.0

\*Arrears of Dividend on Preference Share were also paid in 1968.

